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Big Increase in Crude Oil Production

Average daily production in United States week ending Oct. 20, 2,248,303 bbls.

Two Areas of Country, However, Alone Responsible. Remainder, Including California, Still Falling Off. Powell Real Cause.

Gain in daily production in United States week ending Oct. 20, 90,850 bbls.

By Andrew M. Rowley

Two areas in the United States were responsible for an increase of crude oil production for the entire country averaging 90,850 barrels daily, one of the largest increases registered in many months. However, this increase does not represent normal conditions and the production situation of the country as a whole may be said to be showing improvement. The Wyoming-Montana area, recovering from flood conditions which reduced its output a week ago nearly half, came back during the past week with a production slightly above normal and increased its runs 74,155 barrels daily as compared to the daily average for the week ending October 13. The bringing in of a number of big wells in the Powell Field in Texas resulted in the production of that field reaching a new high average for the week, being 255,000 barrels daily or an increase of 50,825 barrels a day as compared to the previous week. While the increased output of these two fields amounted to 124,974 barrels daily, the increase for the entire country was only 90,850 barrels, showing that other fields of the United States showed a decline in production for the past week averaging 34,125 barrels.

Output Still Below Peak

Despite the extraordinary increase in production during the past week the output of crude petroleum in all the fields of the United States was still 72,211 barrels daily less than during the week ended July 14, which period was the high record of production for the United States, the output then averaging 2,320,514 barrels daily. Since July 14, too, the production of the Powell Field has increased from 67,849 barrels daily to 255,000 barrels daily, a jump of 187,151 barrels. Consequently, even with the large increase registered during the past week, the oil fields of the United States, outside of the Powell Field, have recorded a decrease in production averaging 259,362 barrels daily since the week ended July 14.

It is interesting to consider the changes which have occurred in the production records of the various principal fields since July 14. For the week ended July 14, Oklahoma produced an average of 509,845 barrels daily. Last week the average was 392,293 barrels, a decline of 117,552 barrels daily. California averaged 875,000 barrels daily for the week ended July 14. Last week it averaged 818,500 barrels, a drop of 56,500 barrels a day. In the same time, the Gulf Coast area declined about 12,000 barrels daily; Kansas, about 13,000 barrels a day; Arkansas, about 21,000 barrels; Louisiana, about 7,000 barrels, and North Central Texas about 24,000 barrels.. Powell increased 187,151 barrels daily, and the Wyoming-Montana area about 24,000 barrels.

Powell Is Important Factor

Powell is really the only field in the United States showing a material increase in production. It is problematical just when the peak of production there will be reached as there are a large number of wells near the sand and these could be completed within a short time were operators inclined to bring them in. It is conceded the production at Powell could be brought to 300,000 barrels daily without trouble, but pipe line facilities and storage arrangements could not handle this amount of crude at this time. However, a most important factor in the situation is the fact wells at Powell fall off rapidly. For instance, the production of the field last Thursday was 277,450 barrels a day and on Saturday it had dropped to 265,000 barrels. Big wells have to be completed each week to hold up the production record. New wells soon show a big decline in output.

The initial production of wells at Powell has fallen off about 70 per cent. Since the field was opened up the last of last May, the total initial production of completions up until last Saturday was 1,013,355 barrels. The initial production of 114 new wells completed from the latter part of September until October 18 amounted to 300,706 barrels and yet the total production of the field on October 18 was only 277,450 barrels. Despite this rapid falling off, however, new wells with an initial output of between 10,000 and 14,000 barrels each are being completed in the field.

From the latter part of last week until Tuesday of this week new production in the field amounted to 93,000 barrels and the production of Powell on Tuesday of this week was 317,000 barrels, making it hold the record for production for all fields east of California.

PRODUCTION IN THE UNITED STATES

Estimated daily average production in the oil fields of the United States for the week ended October 20, and a comparison with the previous week follows:

Field	Oct. 20	Oct. 13
Oklahoma—Northern Fields:		
Tonkawa	52,828	57,890
Burbank	90,005	93,030
Other Osage Fields	28,315	28,875
Cushing and Shamrock	24,370	24,390
Bristow and Eastern Bristow	48,625	48,775
Northern Miscellaneous	83,450	84,615
Southern Fields:		
Healdton	17,225	17,210
Hewitt	22,925	22,600
Southern Miscellaneous	24,550	24,990
Total Oklahoma	392,293	402,375
North Louisiana	58,075	58,995
Arkansas—		
El Dorado	10,840	10,875
Smackover Light	16,695	16,195
Smackover Heavy	85,605	90,255
Other Arkansas Fields	11,745	11,750
Total Arkansas	124,885	129,075
North Central Texas	114,710	116,244
East Central Texas (Mexia, Currie, Corsicana, Powell)	301,000	254,734
Kansas	72,250	73,875
Total Mid-Continent Area	1,063,213	1,035,298
Gulf Coast	96,255	97,750
Eastern	111,050	110,975
Wyoming-Montana	159,285	85,130
California—		
Santa Fe Springs	275,000	280,000
Long Beach	248,000	255,000
Huntington Beach	82,000	80,000
Torrance	14,000	12,000
Compton	1,500	1,300
Remainder State	198,000	200,000
Total California	818,500	828,300
Total United States	2,248,303	2,157,453

Increase, 90,850 Barrels

Reducing Operations in Wyoming

The passing of the flood conditions in the Wyoming-Montana area permitted production to attain a normal figure during the past week but the low market for crude and the approach of winter have resulted in operators starting to curtail operations to a minimum. It will be but a comparatively short time until practically all new work will be stopped for the winter. The price of Osage crude was reduced 15 cents a barrel last Saturday, making the quotation $1.20 a barrel.

Comparatively Big Well in East

Considerable excitement and comment was caused in the Oil City, Pa., territory during the past week by the bringing in of a well estimated as good for from 40 to 50 barrels daily in proven territory where it had been thought wells of this type were but a memory of the old days. The completion is located but 12 feet from another producing well. The new well is on the Alonzo Creek farm, 3 miles northwest of Plumer, and when put on the pump, 130 barrels of oil was run to tankage, some of this being from other wells but a majority from the new producer. The well is a third sander, being estimated at 1,100 feet. In the Richburg Field in New York, the original oil field of the Empire State which was opened in 1880, Jennings & Frairie brought in a 60-barrel producer last week. Southeastern Ohio was not to be outdone and the deep sand territory there came to the front with a near gusher, it being the Montana Oil & Gas Company's No. 4 Levi Kennedy, Rush Creek Township, Fairfield County, which produced 275 barrels the first day after a shot.

California Again Declines

Production in California decreased again during the past week, the output being 9,800 barrels daily less than for the preceding week. Santa Fe Springs continued its downward trend with a loss of 5,000 barrels a day following a drop of 20,000 barrels a day during the previous week. Long Beach, which had been increasing its output, fell off 7,000 barrels daily while Huntington Beach showed a gain of 2,000 barrels as did Torrance.

In the North Central Texas fields, production showed a decline of 1,534 barrels daily despite the fact the proration order has been cancelled in that area by practically all the purchasing companies. Decreased runs from the heavy oil district at Smackover resulted in a decrease of more than 5,000 barrels daily in the output of the Louisiana-Arkansas territory. The output of the pools in the Gulf Coast area continues to drop slowly each week. With the low prices for crude which are in effect in the area, it is felt a number of the small operators will have to discontinue operations. To shut down many of the wells would mean practical abandonment of them as it is necessary to pump them 24 hours a day to keep ahead of the water.

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NAVAL OIL RESERVES

The theory of the Government setting aside naval oil reserves appears to have been somewhat upset by the Teapot Dome experience. That famous tract, estimated by geologists, when set aside, to contain upwards of 200,000,000 barrels of oil, is now calculated to have not more than 26,000,000 barrels. Government experts assert that 75 per cent of the indicated supply at the time the reserve was created has been drained by wells on adjoining properties. The investigation by the United States Senate Committee, which was opened last week, may throw additional illumination on the matter but the disappointing output from the dome does not seem to be in dispute.

The incident suggests disquieting questions. The naval oil reserve theory was to provide for a supply of oil in case of war. In the light of these assertions about Teapot Dome it is fortunate that the country was not relying upon that reserve in a period of war emergency. If the experts were so far mistaken in this instance what reason is there to believe that other naval oil reserve propositions of the same character will be any more dependable?

If the Government must have a naval oil reserve, it would seem that the only reliable method to go about it would be to store the oil where it can be seen, above, not under, the ground. The possibility of losses by evaporation, etc., is as nothing compared to this reported 75 per cent shrinkage in the Teapot Dome reserve below the surface.

Other great naval powers have not been depending upon naval oil reserves in the ground; they have been building up storage. In view of the present surplus production and low prices the question of Governmental purchase and storage of oil might well engage the attention of the naval authorities and of Congress. If a naval oil reserve is needed that would seem to be a surer way of having it, if emergency called, than depending upon an estimated deposit in the ground that might be 75 per cent more or less short in actuality when the necessity arrived.

LOOK AHEAD

Those who are alarmed because we have increased the daily average production of a year ago 40 per cent are unduly pessimistic. If they will sit down and study the analysis offered to the New York State Oil Producers' Association by H. G. James they will have a better grasp of the fundamental facts.

A year ago we had a settled production of about 1,000,000 barrels. It took 63 years and the drilling of 600,000 wells to reach that figure. The average production of the 284,380 producing wells last January 1 was 5.7 barrels per well.

In the first six months of this year we drilled 10,010 wells, increasing the daily average production 1,115,000 barrels or an average of 111.3 barrels for each of those 10,010 new wells.

Is it reasonable to suppose that we are going to be able to maintain that rate of production per well in contrast to the 5.7 barrels average of the great mass of 284,000 wells throughout the country, upon which we are dependent for half our total present production?

Even counting the great gushers the daily average production per well is today something less than 8 barrels a day.

When the gushers which have flooded California and the Powell Field decline to settled production that average per well will revert nearer to the average of 1922 and the daily average production will shrink probably, as Mr. James ventures to predict, 500,000 barrels a day, cutting in two, within six months, the excess production of this year over that of a year ago.

The peak of production was reached in the daily average of 2,320,000 barrels in the week ended July 14 last. For the week ended October 13, the daily average was 2,157,000 barrels, a decline in 13 weeks of 163,000 barrels.

Considering Powell's exceptional development, which increased in that period 136,000 barrels, it is seen that had it not been for Powell there would have been a decline in the daily average production in those 13 weeks of 299,000 barrels.

As a sample, consider the fact that 63 wells in the Powell Field brought in by the Humble Co. with an initial production of 205,967 barrels were good for but 51,768 three weeks ago and that completions by the Humphreys Co., with an initial production of 185,550 barrels, had shrunk to 31,417 barrels.

It is upon such slender foundations that our huge overproduction rests. Let Powell decline, as all agree it must, very rapidly when it begins, to settled production and it is very clear that the prediction of a drop of one-half the excess production over that of a year ago within six months is not very wide of the mark.

Despite some difference of opinion regarding California the preponderance of belief is that it has done its best and that there also the decline will be rapid, with no immediate prospect of new gusher fields to keep up the production. Compton and Torrance, even if they justified the hopes of the most sanguine, cannot become a factor before the present overproduction has declined to manageable size.

Meanwhile, consumption is attaining new figures, with the ever-widening use of oil. The campaign for extending the use of fuel oil for heating purposes, for instance, is growing without any special effort on the part of the oil industry to encourage it. On the contrary, some have even tried to discourage it as undesirable and disturbing to other markets. But the public has caught the idea of oil for heat, driven to it by the exactions of the coal industry and the uncertainty of that supply, and if the oil industry does not act voluntarily it will be forced to respond to popular demand for its product.

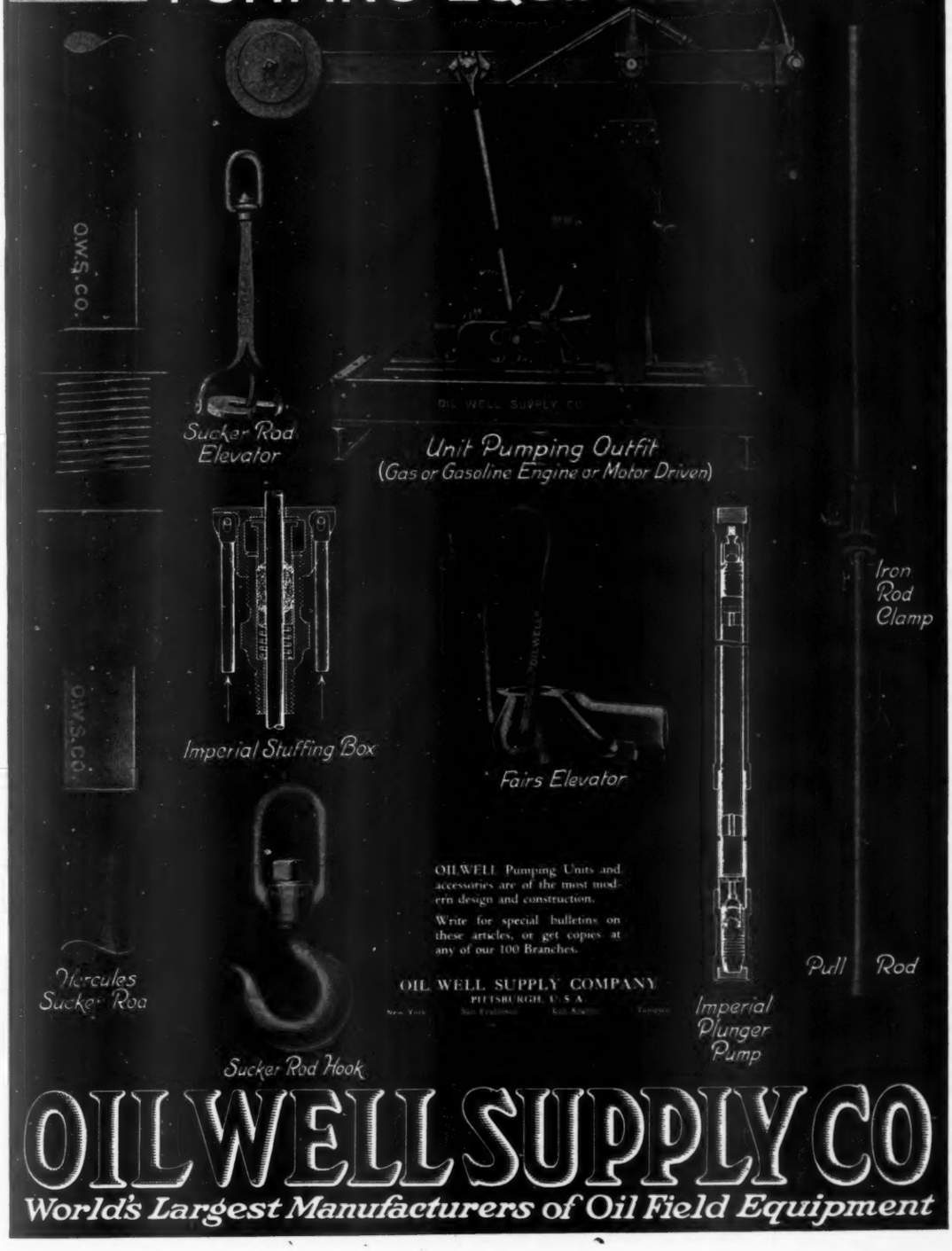
Once the market for fuel or furnace oil is established there will be no more talk of overproduction. The problem then will be to find enough oil to meet the demand. The possibilities of using heavier products in the the internal combustion engine are regarded by engineers as just around the corner, which would mean another great market for the oil industry.

Farsighted students of the development of oil uses are much less concerned about the temporary overproduction of today than about the shortage of tomorrow.

"OILWELL" ESTD. 1862 TRADE MARK (REGISTERED)

"OILWELL" PUMPING EQUIPMENT

"OILWELL" ESTD. 1862 TRADE MARK (REGISTERED)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Marketers Hear Service Station Faults

W. B. Phillips and B. M. Marcus Warn N.P.M.A. of Extravagant Expansion in the Distribution of Petroleum Products

By C. O. Willson

ALL OFFICERS REELECTED

MILWAUKEE, Wis., Oct. 25.—L. V. Nicholas, for the past two years president of the National Petroleum Marketers Association, was reelected here yesterday at the close of the business session of the second day of the annual convention of the association. He and other officers and directors were reelected by unanimous action, following the report of a nominating committee, which based its nominations on results from a recently completed canvas of the association membership. Other officers elected were: S. S. Cramer, Wadhams Oil Co., first vice president; R. E. Gerkins, Gerkins Oil Co., Dayton, Ohio, second vice president; J. L. Murray, Cornbelt Oil Co., Bloomington, Ill., third vice president. Directors elected were: A. W. Long, Long Oil Co., Manhattan, Kans.; R. G. Cunningham, Cunningham Oil Co., Miami, Okla.; F. H. Buehler, Dacokah Oil Co., Madison, S. D.; S. D. Hastings, Jr., Barkhausen Oil Co., Green Bay, Wis.; R. E. Gordon, Oil States Oil Co., Louisville, Ky.; Frank C. Enz, Evansville Oil & Grease Co., Evansville, Ind.; L. L. Coryell, L. L. Coryell & Son, Lincoln, Neb.; H. M. Wilson, International Oil Co., Minot, N. D.; J. H. Smitha, Reed Oil Corp., Atlanta, Ga., and J. S. Wilson of South Carolina.

Following an address by President Nicholas, in which he reviewed the activities of the association for the past year the membership voted to rededicate itself to the carrying out of the program which was first gotten under way at the meeting last year. The main principles of this program are contained in the famed declaration of independence, which has been strongly opposed by several other organizations of the petroleum industry, the national advertising program, coupon books and collective buying. There was no opposition to the four features of the program.

MILWAUKEE, Wis., Oct. 24.—The distributing end of the oil business is suffering from too great an expansion in its facilities for the wholesaling and retailing of refined products. This situation has given the public at large a wrong conception of the oil industry as a whole and threatens disaster to many independent, reputable jobbing concerns unless the tendency is stopped at once. There is also a need for greater economy in the construction and operation of service stations.

These statements summarize the main contentions of W. B. Phillips of the Wadhams Oil Co., Milwaukee, and B. M. Marcus, Metro Stations, Inc., New York City, who delivered the principal addresses at the business session of the National Petroleum Marketers Association, which opened its second annual convention here yesterday. Speaking on subjects concerned with the financial end of the jobbing business both speakers deplored what they said was the unwarranted enlargement programs of those already in the jobbing business and the entry of newcomers who were being misled into believing that there were large profits awaiting them. Both speakers also said that there was tendency to build costly filling stations when those of a less expensive type would serve the purpose. In the discussions which followed the address there was some disagreement among the speakers as to the cause of the situation and the remedy, but none denied its existence.

Approximately 300 jobbers and representatives of refining, marketing and supply concerns attended the opening day of the three-day session. Those present came, as usual, from all parts of the United States. In addition to the business session in the afternoon, those attending were guests at a luncheon and were entertained tonight at a Mardi Gras which was largely attended.

One of the largest exhibits of supplies and equipment in which the jobber is particularly interested was displayed to the delegates in the Milwaukee Auditorium, where the convention headquarters are located.

Address by W. B. Phillips

Practically all those in attendance at the convention were present at the business session yesterday at which L. V. Nicholas, president, presided. Mr. Phillips in his address stated that jobbers should own their own service stations. He declared that the retail end of the industry was suffering from too many curb pumps and similar types of filling stations which he distinguished from the drive-in service stations located on principal streets and operated principally for the distribution of refined products. He said in part:

"I trust you will permit me to dismiss without argument that giving away or renting pumps and tanks to every Tom, Dick, or retired scissors grinder is uneconomic, wasteful, wrong and should be stopped at once. The practice is certainly the most pernicious of any of those by which the attorney general and others could judge us. It makes it too easy to get into the oil business. Simply as a matter of pride we ought to build up our barriers. There is no dignity in serving out bananas with one hand and gasoline in the other.

"This is a time in which almost everyone wants to go into the oil business, in some form or other. I estimate that we have 20 calls a week from persons who tell us they have good corners on which to build stations. One can, of course, build a service station for $8,000, provided he makes a lucky buy. With a little less luck on the property purchose he might put up a station for $12,000, or possibly $15,000, but bargains are unusual and a well located service station on streets or highways of sufficient traffic to justify a station at all will cost complete about $20,000. This is Milwaukee data.

Expense of Service Station

"Let us see the expense involved in operating such a station and how far 2 cents a gallon will go. There is a direct expense connected with any business which must be met before we can begin to figure profits. From our data I know that about two-thirds of a service station's expense must be taken care of with gasoline sales and about one-third with lubricating oil and other sales. Taking $4,000 as the direct expense of the average station, the station must sell 133,000 gallons of gasoline to meet its direct expense alone. Figuring a profit of 6 percent on the investment, the station must sell enough gasoline to make up, at 2 cents a gallon, two-thirds of the $1,200 which is $800, the amount chargeable to 6 per cent profit on gasoline dispensed through the station. This means a total of 175,000 gallons to be dispensed annually. It is ridiculous, unintelligent, and directly contrary to the best interests of the independent marketing industry to encourage such a thing. In the face of this situation in Milwaukee filling stations increased 150 per cent in number and curb pumps approximately 300 per cent for the year ending September 1."

Mr. Marcus was unable to attend the convention, but his paper on economy of construction and operation of service stations was read. He deplored the erection of costly stations where they are not necessary to obtain business. He said his own company had found that service stations costing approximately $1,200 were entirely satisfactory. These stations are 13 by 20 feet, of stucco, with wide driveways. He said in part:

Mr. Marcus on Station Types

"The type and cost of building must be dependent upon the potential gallonage, environment and the nature of competitive construction. For example, a service station located in Pittsburgh, Pa., and competing with one of the ornamental stations located there, must of necessity, be more costly than if this competition did not exist. All things being equal and assuming that the grade of gasoline sold is the same, the average motorist would naturally be attracted to the best-looking station. I would say that the $1,200 station previously mentioned, properly lighted, with wide driveways, and a moderate appropriation for flowers and so forth, should answer the requirement for most locations where there are no unusual conditions present.

"On the subject of economy of operation there is, in my opinion, no such thing as economy in the operation of a service station or marketing service in the commonly accepted interpretation of the word. The goal of the marketer is increased volume. This cannot be brought about by unwise economies. Economies should take the form of cheap help, cheap equipment, or cheap advertising. I believe that young men of attractive personality should be employed as station salesmen. They should be paid a straight salary, plus commission. Build your business upon the foundation stones of quality, service, and advertising. Observe the obvious economies. Do everything in proper proportion and you will secure better results than by concentrating upon the savings of the pennies and cutting of corners."

Advertising Essential

The Wednesday morning session was devoted to a discussion of advertising and selling. A. W. Long, president of the Long Oil Co., Manhattan, Kans.; J. M. McLaughlin, vice president O'Neil Oil & Paint Co., Milwaukee; and J. Hall, representing the Wadhams Oil Co., Milwaukee, delivered the three principal addresses. Mr. Long pleaded for greater cooperation for the national advertising branch of the association activities known as the independent oil men of America. About 20 per cent of the membership of the association now participate in the advertising. Mr. Long said he believed that the very existence of the independent jobbing program which was inaugurated a year ago, depended on advertising. He said his company had been using the local advertising as outlined by the national program and had obtained very satisfactory results.

Speaking on outdoor advertising, Mr McLaughlin pointed out several features of special importance in an advertising program of this nature. He urged that one product be featured in the advertising and then let it carry the other products that are sold. He urged the use of names which are suggestive, unique, easy to understand and remember. Contrasting colors are necessary, he said, in outdoor advertising, one of which should furnish the mass of the sign and the other colors the description. Uniformity in all advertising and brief copy were also stressed.

Mr. Hall gave an illustrated talk on newspaper advertising copy carried by the Wadhams Oil Co. in Milwaukee and other Wisconsin points.

POWELL FIELD HELD RESPONSIBLE FOR CRUDE PETROLEUM PRICE UNCERTAINTY

Much of the uncertainty regarding the crude petroleum price situation throughout the Mid-Continent territory at this time may be traced to the menace of the production of the Powell Field in Texas. Opened the latter part of last May, this field soon became a fly in the ointment of efforts to control the overproduction situation throughout the country and the vast output of that field, increasing rapidly as it has, has hung like the sword of Damocles over the heads of operators in the fields of Oklahoma, Kansas, North Texas and the Gulf Coast area who were doing all in their power to curtail operations to a minimum until the crude situation of the country righted itself.

On Tuesday of this week the Powell Field established a new high record of production for all oil fields of the country east of California when its output for the one day was 317,000 bbls. The previous record was held by Cushing, which, in one day, was reported to have produced 316,000 bbls. Coming at a time when the crude situation of the country was in a serious state due to the immense output of California, Powell has been the one big factor in preventing Mid-Continent operators from competing with California operators. As long as the output of Powell continues at anywhere near the present figure, Mid-Continent operators will be unable to compete with California crude in the eastern markets, according to the official of one of the largest companies.

Powell crude is of high gravity and the posted price for it now is $1 a barrel. Oklahoma crude of the same gravity is down to $1.30 a barrel. The Powell Field differs from the large fields of Oklahoma in that the drilling activity in the latter fields is controlled to a great extent by the needs of the market. Burbank and Tonkawa have shown steady and material decreases in production due to the fact promiscuous drilling was stopped and only necessary work done during this period of overproduction. It is different in Powell. During the past few days, completions there had a total initial output of 93,000 barrels. This great activity at Powell is hurting operators in other fields of the Mid-Continent area.

Powell is the big factor in the present situation and is a menace to the operators in other sections.

PERFECTION VAPOR PRESSURE TANKS
WOOD, AND BOLTED STEEL TANKS

A complete battery of Perfection Vapor Pressure tanks are warding off evaporaton losses in the Tonkawa Field, Okla. (Photo on left.)

Why Oil Producers Lost $50,000,000 in 1923

The U. S. Bureau of Mines is credited with the statement that the evaporation losses of the oil industry last year amounted to $200,000,000.

Other authorities estimate that the producing end of the industry alone lost more than $50,000,000, accounted for in the difference between the cost of production and the ultimate sale price.

And it takes no estimate to make this deduction:

Had every producer taken the proper precautions to ward off evaporation in his lease or other storage tanks, there would have been no fifty million dollar loss.

On the contrary, there would have been a reasonable amount of profit!

It is too early to figure what 1923 will bring forth. We do know that more and more operators are taking steps to ward off evaporation. But we are convinced that the losses will still be large.

If you belong to that class who have not begun a war on evaporation, ponder over those figures above. Better still, get in touch with our branch office in your field. Our representative will tell you how to store your crude in tanks that will actually pay for themselves—not even cost you a cent.

Write for your copy of "The Proof of the Pudding". It's free.

Black Sivalls & Bryson
INC.

BARTLESVILLE ~ OKLAHOMA

Branch offices in all principal active fields

Political Angle Affects Oil Securities

New York Agitation Over Gasoline Prices and Reduction in Crude Prices Tend to Discourage Buying; Market Irregular

B N. O. Fanning
Room 525 No. 30 Church St., New York

NEW YORK, Oct. 22.—Oil securities were irregular during the past week. While the action of these issues indicated that the bottom has about been reached, developments in the oil situation generally tended to discourage buying. The reduction of 2 cents in gasoline prices inaugurated by the Gulf Refining Co. in 24 States on October 17, was given the greatest attention by those interested in oil stocks. The fact that crude oil production has been showing consistent, though moderate, declines during the past three or four weeks, did not make much impression. As far as Wall Street is concerned, the political angle of the oil situation is being more and more emphasized. New York State has now numbered itself among those which are investigating the oil situation, and to all indications the widespread agitation in the various States is believed to be the fore-runner of another investigation by congress.

Among the developments as to oil company dividends was the action of the Buckeye Pipe Line Co. in reducing the annual rate from $7 to $6 per annum, while the Cumberland Pipe Line Co. declared an annual dividend of $10 per share. Taking the 100 per cent stock dividend declared by this company into consideration, this is equivalent to $20 per share on the old stock, as against $12 per year formerly paid. In other words, the present Cumberland dividend represents a substantial increase over a year ago.

Pacific Oil in Good Demand

Among the individual oil securities, Pacific Oil stood out as being in good demand throughout the past two or three weeks. One report current is that Standard Oil Co. of California is increasing its holdings of Pacific Oil stock. Pacific Oil Co. controls the Associated Oil Co., and the combination of the two represents one of the strongest organizations on the Pacific Coast. Added to this Standard's substantial interest in Pacific Oil, which it has held for several years, and it is quite plain that Pacific Oil is one of the country's strongest oil companies.

While the overproduction of oil is a discouraging feature to most people it is recognized everywhere that a rapid decline in southern California output would change the whole aspect of the situation from every angle. The California companies, it is believed, would be the first to benefit from such a development.

California's output is off more than 50,000 barrels from the peak. While it may be pointed out that 50,000 barrels is not much in comparison with the country's present rate of oil production, it should also be emphasized that a drop of that amount indicates a big physical change in the production situation, compared with the consistent gains registered throughout the year up to July or August.

Those who have formed the habit of counting on steady increases in oil production in the United States indefinitely are apt to find that output can drop as rapidly as it can increase, once it gets going.

Prominent oil men who are very close to actual conditions in the oil business are wont to deplore optimism at this time as ill calculated. They fear that optimism will bring about over-drilling, and will therefore result in aggravating the situation.

If the course of oil securities is any criterion, so far this is the view held in financial circles. There is plainly no place for optimism in that quarter.

On the other hand, the "old-timers" in the petroleum business still stick to the old habit of comparing the present situation with the former periods of overproduction, and point out that big oil production cannot be depended upon to continue uninterrupted.

Perhaps both of these views are partly correct. Some students of the situation say that the big, established, all-around petroleum organizations have strengthened their position materially during the past few months, have met the situation coolly and constructively. On the other hand, the producers and refiners in certain fields have suffered largely because of physical conditions in their territory. These operators, while representing a large portion of the industry, do not constitute the bulk of America's oil investment, and even these will work out their own salvation in due course, with the help of a drop in oil production.

The Independent Oil & Gas Co. reports for the three months ended September 30, 1923, total income after expenses, taxes, dry holes, etc., of $140,223 available for surplus and reserves, before allowing for federal taxes. Income for the nine months ended September 30, was $670,882. Gross earnings for the quarter were $303,840, and for the nine months $1,208,159.

Invincible Oil

The Invincible Oil Corporation reports for the six months ended June 30, 1923, net income of $932,823 after expenses and interest but before depreciation and depletion, compared with $1,676,506 in the first half of 1922. The consolidated income account for the six months compares as follows:

	1923	1922
Gross earnings	$1,267,337	$3,571,690
Other income	112,728	153,196
Total income	$1,380,065	$3,724,156
*Expenses, int., etc.	447,242	1,947,650
†Net before deprec., depletion, etc.	$ 932,823	$1,676,506

*Includes development and drilling expenses.

Associated Oil

Associated Oil $25 par value certificates are now traded in on the New York Stock Exchange, and are selling around $26 per share. President Shoup, president of the company, says that Associated Oil and proprietary companies for the first six months of 1923 showed sales of refined oil 22 per cent above those for the same period of 1922. Sales of fuel oil and refinable crude increased 228 per cent.

Cumberland Pipe Line

The dividend of $10 per share declared by the Cumberland Pipe Line Co. is payable December 15 to stockholders of record November 30.

Houston Oil Co.

The Houston Oil Co. reported gross earnings of $2,616,616 for the first nine months of the year, against $2,071,286 in the corresponding period last year. After payment of all expenses and taxes, but before reserves for depreciation and depletion, there was reported net income of $1,774,583, against $1,465,835 a year ago. For the three months ended September 30, the company reported gross earnings of $1,157,349, against $582,154 in the same period last year. Net earnings for the September quarter, after expenses and charges, but before reserves for depreciation and depletion, totaled $840,251, against $397,627 in 1922.

NEW YORK STOCK EXCHANGE—LIST OF ACTIVE STOCKS

No.	Stock—	Par	§Dividend Rate	Closing Quotations Oct. 23	Oct. 16	Range 1923 High	Low
1.	Associated Oil	25	6	25¾	25¾	....	....
2.	Atlantic Refining, common	100	4	*102	103	160	98¾
3.	Barnsdall "A"	25	..	11	*11	35	9⅞
4.	Caddo Central Oil	..	..	*1⅝	*1⅜	9⅛	1⅛
5.	California Petroleum, common	25	7	18⅜	18⅜	29⅛	17⅛
6.	Cosden & Co., common	..	..	24½	26	62¼	22⅜
7.	General American Tank	..	†3	*41	*40	71⅞	40
8.	General Asphalt	100	..	27	28¾	54	23
9.	Houston Oil	100	..	49⅞	49	78	40¾
10.	Independent Oil & Gas	10	..	*4½	5⅜	11¼	3⅝
11.	Indiahoma Refining	25	..	*1¼	1½	3	1¼
12.	Indian Refining	10	..	*4¼	*5	8⅛	5
13.	Invincible Oil	50	..	8¼	8⅛	13⅛	8
14.	Marland Oil	..	..	22¾	23	59⅝	20¼
15.	Mexican Seaboard	..	..	9¼	9⅛	19⅜	5¾
16.	Middle States Oil	10	..	5⅛	5⅜	12¼	4¾
17.	Pacific Oil	..	†2	36⅝	37⅝	48⅝	31½
18.	Pan-American, common	50	16	54⅝	57	93½	53
19.	Panhandle Prod. & Ref.	..	..	*1⅛	1⅜	6¼	1⅝
20.	Phillips Petroleum	..	†2	23	23	69⅝	19¾
21.	Pierce Oil, common	25	..	1⅝	1⅞	6	1½
22.	Producers & Refiners	50	4	21	21¼	58¼	20⅛
23.	Pure Oil Co., common	25	6	17⅜	17⅜	32	16¼
24.	Royal Dutch, N. Y., sh	13.40	2.62	44½	44	55⅛	40½
25.	Shell Transport	10	x92½	30⅝	*29	41¼	29½
26.	Shell Union, common	..	†1	13⅝	14¼	19¼	12⅝
27.	Simms Pet.	10	..	7⅜	*7⅝	16⅜	6½
28.	Sinclair Consolidated, common	..	†3	18⅝	18½	39⅞	16
29.	Skelly Oil	25	..	15⅝	16½	35	12⅛
30.	Standard of California	25	8	51	51⅛	64⅛	47⅛
31.	Standard Oil of N. J.	25	4	32¼	32⅝	44½	30⅞
32.	Standard of New Jersey, preferred	100	7	117⅝	116½	118	114¾
33.	Superior Oil	..	..	2¼	2½	6¾	2
34.	The Texas Co.	25	12	40⅝	41	52⅞	39¼
35.	Texas & Pacific Coal & Oil	10	..	6¼	7⅛	24⅜	7
36.	Tide Water Oil	100	..	100	x100½	144	94
37.	Transcontinental	..	..	2⅛	2⅝	14½	2
38.	Union Tank, preferred	100	7	*107¼	*107¼	114	106
39.	White Eagle Oil & Ref.	..	2¼	*21	22½	30⅝	20⅛
40.	White Oil	..	..	*⅝	⅝	5⅞	⅝
	Standard Oil Stocks						
41.	Anglo-American Oil	5	15	14⅜	14½	19¾	13½
42.	Borne Scrymser	100	12	*128	*132	163	110
43.	Buckeye Pipe Line	50	14	*73½	77¼	94	77
44.	Chesebrough Manufacturing, Com.	100	14	*220	225	238	205
45.	Continental Oil	25	8	35⅞	*36	50	32½
46.	Crescent Pipe Line	25	6	*16	*16	25	16
47.	Cumberland Pipe Line	100	12	*106	*103	116	80
48.	Eureka Pipe Line	100	8	*96	*96	117¼	96
49.	Galena-Signal, common	100	4	60⅛	60	78	55
50.	Humble Oil & Ref.	25	4.8	34¾	32½	41	28¼
51.	Illinois Pipe Line	100	16	*153	*156	171	152
52.	Imperial Oil, Ltd.	25	16	97	99	123	92
53.	Indiana Pipe Line	50	16	*84	90	103	82½
54.	Intl. Pet., Ltd.	..	x50	15⅛	15½	24⅜	13¼
55.	Magnolia Pet.	100	4.5	132	133½	166	123
56.	National Transit	12.50	16	*22	*22¾	29	22¾
57.	New York Transit	100	10	*93	*92	138	92
58.	Northern Pipe Line	100	25	101½	103	111	96
59.	Ohio Oil Co.	25	8	*54	55½	85¾	48¾
60.	Penn-Mex Fuel	25	..	19½	*20	28	10½
61.	Prairie Oil & Gas	100	8	170	166	272	152
62.	Prairie Pipe Line	100	8	99	99	117	93
63.	Solar Refining Co.	100	15	*170	*170	212	161
64.	Southern Pipe Line	100	16	91½	92	116	91
65.	South Penn Oil	100	..	118	116	196	100
66.	South West Pa. Line	100	8	*78	*80	89	66
67.	Standard of Indiana	25	10	55⅛	55½	69⅞	49¼
68.	Standard of Kansas	25	8	*39⅝	39½	56¼	36½
69.	Standard of Kentucky	25	16	*93½	92	109½	76
70.	Standard of Nebraska	100	20	*215	*215	280	186
71.	Standard Oil of N. Y.	25	5.6	42⅜	42	49¾	35½
72.	Standard of Ohio, common	100	10	272½	*273	317	270
73.	Swan & Finch	100	..	*25	*25	38	21½
74.	Vacuum Oil	25	8	50⅝	49¾	55½	40
75.	Washington Oil	10	..	20¼	*18	28	19
	Miscellaneous Stocks						
76.	Cities Service, banker's shares	..	‡31	*12½	*12	18½	12⅞
77.	Gulf Oil Corporation of Pa.	25	6	*51	*50	69¼	45¾
78.	Maracaibo	..	..	*18½	*18	....	....

*Bid, no sales. †In dollars. ‡6 per cent in cash and 15 per cent stock dividend declared; now being paid in scrip. §The figures carried in this column are kept up-to-date as far as possible but are not guaranteed. xCents per share.

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange weekly was as follows:

Oct. 23	42.42	Sept. 11	44.78	July 31	42.58
Oct. 16	42.80	Sept. 4	44.06	July 24	46.32
Oct. 9	43.29	Aug. 28	44.18	July 17	46.52
Oct. 2	43.53	Aug. 21	44.24	July 10	45.90
Sept. 25	42.48	Aug. 14	43.33	July 3	45.48
Sept. 18	41.43	Aug. 7	43.87	June 26	47.52

Automobile Output Is Sixty Per Cent Above Last Year's

September production of motor cars and trucks was 328,738 compared with 345,608 in August and 203,963 in September, 1922. September production was 5 per cent under August but 61 per cent in excess of September last year, when production declined 25 per cent from the previous month. Production in the first nine months of 1923 was 3,021,896 cars and trucks, compared with 1,884,289 in the same period last year. The monthly comparisons were as follows:

	1923	1922
September	328,748	203,963
August	345,608	272,744
July	326,693	246,125
June	377,422	289,120
May	393,149	285,167
April	381,224	219,294
March	353,316	171,390
February	276,545	120,293
January	244,703	90,483

An "ad" of a big oil company

Marland carries all group and Compensation Insurance on The Travelers, reaping the benefit of Travelers claim service, Travelers inspection service, Travelers hygiene booklets, Travelers safety bulletins, and Travelers consultative service on many subjects

EFFICIENCY and PROTECTION

The health, safety, and efficiency of employees, and the protection of physical properties from the hazard of damage by fire or accident, are promoted at every opportunity by enlightened corporations.

Marland Oil Company has adhered to this principle since the date of its organization.

This company maintains an exceptionally high standard of health by means of periodic physical examinations. It operates a modern, complete clinic and provides first-aid and visiting nurse service for all employees who need them.

Group, health, accident, and life insurance are provided for all permanent employees of the company. Safety devices are provided wherever necessary, and safety committees have been formed in the refinery and field. An engineer supervises the work. The company has reduced accidents to a very low point.

Other items in the company's elaborate program of attention to the well-being of its employees include liberal compensation, wholesome working conditions, and steady work.

An employee who is well treated and has a feeling of security is a better worker and takes more interest in giving a full measure of service than one who is not.

The directors are convinced that every constructive step that can be taken for the benefit of employees will increase efficiency and lower the cost of operation.

Protection of the company's properties is also adequately provided by complete fire-fighting devices, of which steam and chemicals are notable components. Use and occupancy and fire insurance are, of course, provided.

MARLAND OILS

THE TRAVELERS INSURANCE COMPANY
Hartford

L. F. BUTLER, PRESIDENT

THE TRAVELERS INDEMNITY COMPANY
Connecticut

THE TRAVELERS

ACCIDENT, LIFE, LIABILITY, HEALTH, AUTOMOBILE, STEAM BOILER, COMPENSATION, GROUP, BURGLARY, PLATE GLASS, AIRCRAFT, MACHINERY

Natural Gasoline and Kerosene Firmer

Group 3 Refined Oil Market Stronger Along Some Lines With Other Products Showing Tendency Toward Weakness

By Ralph T. Baker

Continued firmness in some lines, with weaker tendencies in others characterized the general situation regarding Group 3 refined markets during the past week. Several developments are worthy of notice, however, and the undertones which became apparent during recent days in some branches may be productive of radical changes in a short time. Bad weather hampered shipments to a slight degree and the week was slower than the average.

Leaders in refined products during the past week were natural gasolines and kerosenes. The approach of cold weather and the enlarged demand for the product of Oklahoma gasoline plants is given as the outstanding reason for the continued strength in this line. In some cases manufacturers report they are sold up over the balance of the winter. As shown in the refinery price list, the firmer tendency was brought out in the slight increase in prices generally paid for the Grade A product. Other grades participated in the strength also, but the shading was so slight that it could not be made the subject of a general advance in prices. Some manufacturers are not quoting on contract inquiries on any grade.

There has been some speculation recently concerning the constantly increasing strength of natural gasoline. The fact that most of the product is used by refiners for "stepping up" the straight-run product, allowing a deeper crude cut, is common knowledge. The difference between the price paid for natural gasolines and the price paid for New Navy product leads some price students to believe that the price for natural gasoline may become too high to make it profitable for refiners to use it, resulting in a curtailment of orders for this product. Other refiners say present prices are justifiable and that the market for this product could be continued with additional strength. An inspection of prices leads to the belief that the demand for natural gasolines will be continued under present conditions during the winter, unless conflicting developments arise, and the divergence in price compared with New Navy becomes too wide.

Kerosene Is Stronger

Kerosene also showed signs of strength during the week. This feature was the cause of a slight tendency toward higher prices, with a few sales made at a slight increase over the common figure of the previous week. Refiners report that the 41-43 water white and the 42-43 water white kerosenes were increasingly scarce during the past week, with the demand continuing strong from all quarters. The strength of this product in Group 3 was but a part of the general strength apparent in the North and East. Curtailment of runs in refineries in this section, coupled with a seasonal increase in demand from other districts, is given as the reason for the firmness exhibited.

Except for a large order for gasolines and kerosenes placed by a big purchaser in North Texas and Oklahoma, the market for gasolines, with the possible exception of the higher gravities, could be said to be approaching dullness during the past week. The order referred to included 2,000,000 gallons of 56-58 437 end point New Navy, 4,000,000 gallons of 64-66 375 end point gasoline and about 8,000,000 gallons of 41-43 water white kerosene. It is intended to cover export shipments over November.

While the demand for kerosene was exhibited in additional strength as the result of the news of the order and general conditions, the order had the effect of holding New Navy to a mere firmness when compared to the prices of the former week. This may be summarized as a tendency toward weakness in the gasoline market, had it not been for the influence of this large export order and the accompanying strength it afforded the market.

The general opinion during the week favored a firm price at 6½ cents for spot shipment on New Navy, with orders for November shipments going at 6¼ cents. There was considerable comment from both buyers and sellers, however, leading to the belief that the price for this grade of gasoline would not hold up more than a few days longer. Demand for the lower grades of gasoline has already weakened with but little of this quality being shipped.

Crude Situation a Factor

This feature, however, is due to the seasonal change and the laxity in the demand for summer product. The higher gravities are rather scarce, with an accompanying firmness in price. The demand for them is good, being seasonal in character. The general tone regarding New Navy leads many refiners to consider the market as softening a trifle, with a majority of the sales being made at 6½ cents. Inquiries for November are said to exhibit little enthusiasm. The sentiment concerning the possible price structure over November seems to indicate that it is inclined to be shaky. A few sellers are still inclined to optimism regarding the situation, but most of the refiners confess that they are "on the fence."

Any discussion of the refined market situation in Group 3 generally leads to a consideration of the crude oil market. It is speculation over this factor that is uppermost in the feeling of unrest now current among the trade. Consideration of the recent phenomenal increase in the output of crude oil at Powell, Texas, can lead to nothing but a "bearish" outlook. The revival of the Wyoming-Montana fields, and the continued menace of California, coupled with slowly declining Mid-Continent production, affords refiners anything but a feeling of optimism.

Affects Price Situation

The Magnolia, Gulf, Prairie, Sinclair, Texas and Humble companies are all either producers or buyers of crude in Powell on a large scale. These companies are buyers of oil in the North Texas fields. All but the Humble are purchasers of crude in Oklahoma and of these the Prairie, Sinclair and Magnolia are buyers also in Kansas.

Every barrel of $1 high grade crude produced or purchased by them in Powell directly affects their customers in other Mid-Continent fields. Oil of the same quality in Oklahoma and Kansas is costing these purchasers $1.30, or 30 cents a barrel above the Powell posted price. Already the North Central Texas fields have felt the influence of Powell in a downward revision of prices, and Oklahoma and Kansas operators are sitting as nervous as a timid man on a powder keg.

Recent reductions in tank wagon prices for motor fuel, affecting the entire market in the East and South have not been reflected in lower refinery prices in Group 3 to date. Students of prices say the reductions had been discounted by refiners previously. Nevertheless, the flood of crude oil and the lower tank wagon prices are making many refiners dubious over the final outcome.

In discussing the situation with one man the statement was offered that the refiner could not stand for a much larger reduction in his price. The remark was then offered that the refiner had been selling at a loss for several months and that he could take additional losses just as readily as he had taken the losses in the past. It was pointed out that the public is eager for gasoline at the lowest possible price, and is utterly regardless of the cost of making and marketing it.

Many refiners seem to think that a cut in the price of the various grades of Oklahoma crude is to be expected. They think the common prices paid in the North Texas district will be made to include Oklahoma and Kansas. This would result in a five-grade market with the price ranging from 50 cents to $1.25. A difference of opinion is noted regarding the probability of a reduction in the price in Oklahoma. Most refiners and marketers agree that a reduction is impending and would be justifiable. They disagree, however, on the probability of immediate action. Some say the situation may change in a short time; while others assert that the present posted price may continue throughout the winter.

Cheaper crude would result in larger operation of refineries and an accompanying decrease in the price of motor fuel. It is largely speculation on this possibility that is causing the feeling of unrest which was current during the week among refiners. At present, however, the refiners are curbing their runs and with present prices for crude continued additional curtailment of runs may be expected.

Fuel oil was no firmer during the week, holding to the prices of the previous period in most cases. A plentiful supply in North Texas is given as the reason for the unimproved situation in Group 3. Demand is said to be under anticipation for this period of the year, and is giving disappointment to some holders of large stocks.

Along with fuel, gas oil has shown signs of weakness. This condition has not been reflected in any radical price changes to date, but may be considered as the outcropping undertone which may be voiced forcibly during the next few days.

Distillate likewise, was more plentiful, and was approaching a condition of weakness. With the season for furnace oil now in order, the demand for distillate and gas oil is considerably smaller than was anticipated, following reports of many new installations of oil burners in residences and buildings in northern cities. Firmer prices are anticipated by many, however.

Blends continued firm and scarce with only small amounts moving. Road oils were practically off the market, due to the lateness of the season for this product.

Lubricants Are Firm

Lubricants continued firm. The situation for this class of refined products remained good during the week, with a fair movement of cars and prices in most cases remained the same as those for former weeks. It was the general opinion that neutrals were strong, taking the entire list as a unit. There were some reports of lower viscosities being offered at shaded prices, but as a rule the firm prices of the week before prevailed.

Bright stock remained the same, with good demand evidenced. With only a few refiners in the Group manufacturing lubricants, these plants report that they are sold up on practically every product they offer. In some circles there is a sentiment pointing toward a shortage of lubricants, with a continued good demand over the winter months. Several refiners anticipate a stronger market for all kinds of lubricants, pointing to the increased curtailment of runs in plants manufacturing them, and the low stocks now in storage.

Wax was still holding firm with a tendency to show continued strength.

REFINED MARKET BAROMETER

Recent tank wagon reductions in States of the East, Middle West and South, were responsible for lower gasoline prices to the refiner in some sections and may cause lower prices in other regions soon. Uneasiness over the refined market situation is apparent in all quarters. Lubricants hold a firm position with a good demand apparent. Kerosene stays steady, with firm prices for lighter burning oils. Fuel oil is weaker due to large supplies. Natural gasolines stay firm. Wax holds steady. Export orders aid kerosene and higher gasolines.

Mid-Continent—Gasoline prices remain firm with indications of weakness from some quarters. Demand for low grades slackening; New Navy may be shaded soon; higher gravities still selling well. Natural gasoline shows strength. Kerosene demand holds up, giving it strength. Gas oil and fuel oil show slightly weaker tendencies. Distillate also is plentiful. Blends scarce and firm. Lubricants strong. Wax firm.

North Texas—Export order aids 64-66 gasoline. New Navy sluggish, with prices sagging. Kerosene weakens slightly. Natural gasoline demand falling off. Gas oil and distillate steady. Fuel oil starts to move with large stocks on hand, with price tendency pointing toward weakness.

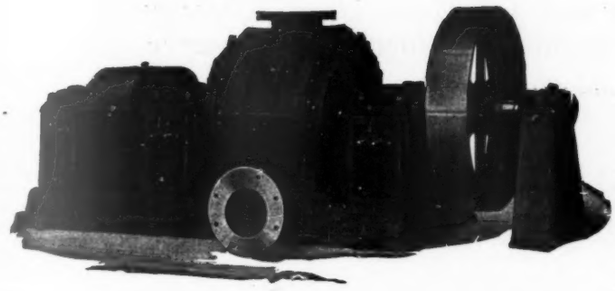
Gulf Coast—Shortage reported in some grades of zero cold test lubricants. Threat of lower prices for crude bothers refiners. Shipments moving over wide area at profitable margins. Plants operate at capacities. Fuel oil fails to pick up. Gas oil plentiful and weak in price.

Lower Mississippi—Uneasiness prevalent among refiners and jobbers. Gasoline weak. Fuel oil stiffens. Import shipments good from both Mexico and California. Gasoline and fuel oil strongest products exported recently. Large export movement.

Chicago—Bad weather retards gasoline demand, with prices remaining firm. Heavy fuel oils quiet; light burning oils firm and scarce. Kerosene market good. Distillates sell well. Gas oil stays firm. Lubricant business good with many orders ahead. Tank wagon prices shaky, with gasoline price wars reported.

Atlantic Seaboard—Gasoline reductions cause surprise. Investigation of prices started by Governor Smith of New York. Eastern refiners have Atlantic market to themselves at present, due to low prices forcing out Mid-Continent and Pennsylvania products. Gulf reduction significant. Market for lubricants holds steady; demand good. Fuel oil demand holds up, but imports cause lower prices. Crude oil receipts at ports is large. Kerosene export prices advanced.

Pennsylvania—Gasolines and naphthas weaker. Fuel oil shade lower. Blends drop. Lubricants and wax hold firm.



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When an impeller is in the position where one tip has just cut off the opening to the suction side, and the opposite tip is ready to open to the discharge side, there is a volume of gas trapped between the impeller and the case. As the impeller continues to rotate it opens to the discharge and pushes the gas positively into the discharge system. The action is repeated twice for each revolution of an impeller or four times for each revolution of the Gas Pump.

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Experts Report Teapot Dome Shrinkage

As Low as 12,000,000 Barrels and Not More Than 26,000,000 Estimated as the Present Potential Production of Reserve

By Charles E. Kern

WASHINGTON, Oct. 23.—The Senate committee on public lands today met to hear testimony on the advisability of the action of former Secretary Fall in leasing the Teapot Dome to Harry F. Sinclair for immediate drilling.

Senator Smoot presided and submitted the reports of the two geologists who have examined the Teapot Dome for the committee, James O. Lewis of Tulsa, and Frederick G. Clapp of New York.

Teapot Dome was estimated by geologists, when set aside, to contain upwards of 200,000,000 bbls. of oil, and the results of the recent surveys are believed certain to have a great influence on the trend of the senate inquiry which was undertaken after Senator LaFollette and others had charged that the Interior and Navy Departments had handed over a highly valuable piece of Government property to private control by leasing the reserve to the Sinclair Oil interests.

Government experts attribute a loss of 75 per cent of the indicated supply of oil almost entirely to drainage through leakage into adjacent properties which have enjoyed prior development. The drainage theory was supported by the condition of the earth structure in the field and by the location of such wells upon the property as proved to be producers.

Almost without exception, the producing wells are situated in the northern sections of the Teapot Dome reserve, adjoining the southern portions of the Salt Creek Pool and in line with the slant of the oil bearing sands of the latter property while dry wells predominate among those drilled upon the southern sections of Teapot Dome.

In the strata on Government maps as the "first Wall sand" of Teapot Dome, estimated in the original survey to contain at least 50,000,000 bbls., the department investigators reported that no oil in commercial quantities had been found. There was every evidence that it had been present recently in great quantity, numerous "pockets" having been left by the receding level.

Geologist Clapp's Report

Mr. Clapp's report, read today to the committee, declared that 70 per cent of the producing area of the dome was subjected to drainage. He said an area of 2,300 acres in the reserve will prove oil bearing and 1,400 acres gas bearing.

"While the balance, amounting to about 5,600 acres, will be barren of oil or gas in every known producing formation," he said, "I estimate that 1,600 acres or 70 per cent of the estimated oil bearing area is susceptible to imminent drainage or reduction of the percentage of recoverable oil by wells drilled in the adjoining edge of Salt Creek Field, and that about 30 per cent of the oil bearing area is insusceptible of such drainage or reduction to any commercial degree.

"Only one sand in the Teapot Field is productive. The principal problem is at present confined to the second Wall Creek sand. Teapot and Salt Creek Fields cover separate domes in the Salt Creek anticline. Although the domes form two distinct structures, the second Wall Creek or principal producing sand, is filled with oil between them, not with water, as was predicted by some persons.

"Sooner or later encoachments of water in the second Wall Creek sand on the Salt Creek-Teapot Field will be an effect of exhaustion rather than an element of it. The reduction of gas pressure will soon reduce the recoverable oil from Teapot Dome as far south as the second Wall Creek sand body is continuous. Whereas in the last mentioned year only the first Wall Creek sand was known, the second Wall Creek sand has since been discovered, but the first sand is barren under 80 per cent of Salt Creek Field and under all of Teapot Dome. The second sand is expected to prove productive of oil only under about 2,300 acres of Teapot Field but productive of natural gas under 1,400 acres. This surprising condition could not have been known in advance."

Mr. Clapp says rough estimates give an average of 26,000,000 bbls. as the probable oil content of the second Wall Creek sand in the naval reserve, of which 16,600,000 is susceptible to drainage. Although some oil may exist below the second Wall Creek sand the production of deeper sands is problematical.

The natural gas content is estimated at over 33,000,000,000 cubic feet, reduced to atmospheric pressure.

Damage By Drainage

Mr. Lewis points in his report to damage by drainage of two kinds, one from loss of oil and the other from loss of gas pressure under conditions that lessen the possible recovery of oil from the sand.

"The loss of oil," he says, "could readily have been avoided by two or three rows of wells but that could not be done to avoid loss of gas which was the danger in this case.

"Since the reserve has been developed, it has been found that the saddle is filled with oil in the second sand and not water; that the first sand does not contain oil but water in the Teapot Dome; that the center of the dome contains gas alone in the second sand and that 2,430 acres only will be oil bearing instead of the 5,670 acres estimated by the Bureau of Mines.

"Data is not yet sufficient for close estimation of the oil reserve, but it is probable that the reserve will produce not less than 12,000,000 bbls. of oil, nor more than 24,000,000 bbls. The higher figure is but a fraction of the estimate of 135,000,000 bbls. made prior to development by the Bureau of Mines. Attractive profits from drilling and producing this oil will not be made unless future prices average considerably better than at present and unless production proves to be nearest the maximum estimate. These estimates are only for the Wall Creek sands but the possibilities from deeper sands in my opinion are not attractive.

Storage Best Reserve

"The comparison of the conditions thought to exist in the reserve when it was created and again when the lease was executed, and finally since development emphasizes the commonly admitted fact that no one can foretell with absolute certainty what will be found in an untested field. No reliance could be placed on Teapot Dome as a reserve until the existence of oil in something like the desired quantities had been demonstrated by test wells. My conclusions may be concisely stated as follows: The conditions known of in 1922, but not in 1915, demonstrated that the original conception of a reserve to be held in the ground indefinitely was not feasible; that important parts of the reserve would soon be subject to loss by drainage, and that no part could be counted on as sufficiently protected to hold for more than a few years; that the risk of damage was not so urgent in itself as to necessitate the immediate leasing of the reserve, which could have been delayed some months, if enough were to be gained thereby to compensate the probable losses, but that this question leads to important considerations not within the scope of my instructions; that the true conditions of the Teapot Dome, as of any other field, were not determinable until wells had been drilled; that a comparison of the forecasts in 1915 and in 1922 with the facts known will disclose the unreliability of such forecasts.

"Because of the possible consequences of a failure of the reserve the ultra-conservative viewpoint had to be followed, but no field could be considered an assured reserve until tested and it was questionable whether the underlying policy was as practicable as the policy of storing fuel oil in tanks at stragetic points, and the reserve will produce but a fraction of the oil expected and to get the best results operation of the reserve as a unit under one efficient management was desirable."

General support was given by the two experts to the chief reason advanced by administration officials for granting the Sinclair lease—the danger of drainage from adjacent wells in the Salt Creek Field. This danger has been denied by critics of former Secretary A. B. Fall, largely responsible for the lease made jointly with Secretary Denby of the Navy Department to the Sinclair interests.

Mr. Fall Defends Lease

Former Secretary Fall was the star witness Tuesday when there were present Senator Smoot, chairman, and Senators Ladd, Jones of New Mexico; Walsh of Montana and Lenroot of Wisconsin. Senator Wash, who had read into the record a vast amount of official records on the previous day, questioned the former secretary resecting the authority under which he had undertaken to administer the Teapot Dome. The Montana Senator endeavored to narrow down the authority of the Secretary of the Interior to express authorization by acts of Congress to show that he lacked authority to remove the oil from the Naval reserve. To this Mr. Fall declared that the President of the United States has authority which does not rest entirely upon any statute which Congress might pass.

"Somebody must administer the property of this government," said Fall, "and the people of the United States may express themselves as opposed or otherwise as they please. The president can call upon his assistants who have expert knowledge and that was what was done because the Bureau of Mines, under the Interior Department, had that knowledge and had long been checking the oils on the Naval reserve and collecting the royalty which they turned over to the Navy."

Against this view Senator Walsh read various statutes to show that contracts for furnishing supplies to the Navy required that there should be public advertisement before awards were made, but Mr. Fall insisted that the contract for leasing the oil lands of the Navy did not fall under the head of any of these statutes, whether for purchasing supplies or for personal services.

Referring to the drainage of oil from Naval Reserve No. 2, Mr. Fall declared that, while he did not wish to criticize the former administration, if he had then been Secretary of the Navy, he would have found some way to stop it. This drainage was from outside the reserve, but it was as effective as if it had been within the reserve. Regardless of what the law should have been deemed applicable to such a situation he would have sought some means to protect the property of the government.

Senator Walsh carried on a long cross-questioning of Mr. Fall with the purpose of establishing the lack of specific authority to exchange oil for storage as was done in the Sinclair contract, but these attacks were always met by statements of the executive power carrying an implied right to do all necessary things for the conservation of the oil property of the Government. These naval oil reserves had been set aside by the President from the public domain without authority of Congress and in spite of the fact that when they were set aside Congress had authorized the leasing of these lands to private persons. Later Congress approved these acts of the President and the supreme court sustained him. It followed as a corollary of this transaction that the executive had power to conserve the oil, and storage was a necessary part of conservation when it was in danger of drainage. About this general proposition there was a long and tedious cross fire of questions and answers.

WYOMING DISAGREES WITH SENATE REPORT

CASPER, Wyo., Oct. 20.—The report of the geologists who examined the Teapot Dome for the United States Senate Committee has awakened considerable discussion. The statement that the petroleum deposit that had existed at one time in the first Wall Creek sand in the Teapot Dome, had been drained by the wells in the Salt Creek Field, is bringing up much opposition among local engineers and the statement is refuted here as misleading.

It is considered that at one time the first Wall Creek sand on the Teapot Dome may have held petroleum deposits, but this was probably far back and not within recent years that would have permitted its drainage by the wells of the Salt Creek Field.

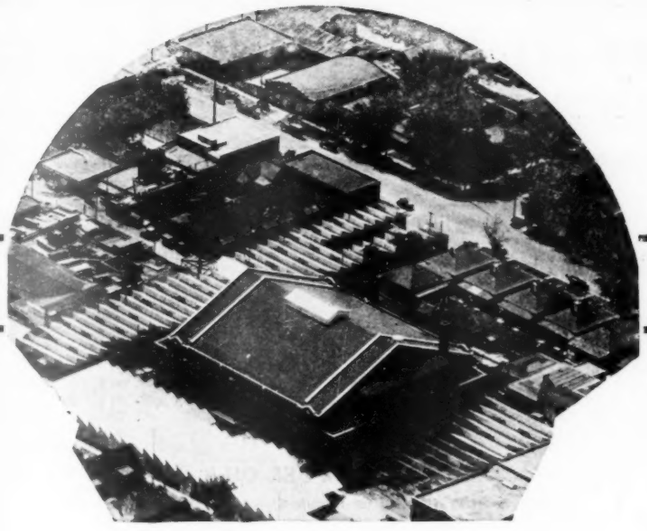
In a study of the history of the Salt Creek Field proper, without any relation to the Teapot Dome development, it is noticeable that the first sand or Shannon produced oil from an average depth around 800 feet. The area covered by this pool was defined at about 1 square mile, or 630 acres.

Then the development of the field uncovered the first Wall Creek sand at about 1,400 feet in the central part of the structure and subsequent development showed this area to cover about 6 square miles. It is worthy of note that the area of the field jumped from one to six when the first Wall Creek sand was found productive.

Next, a test drilled to the second Wall Creek sand showed large deposits of petroleum in that formation and the productive area of this horizon is now, roughly, about 35 square miles, not taking the Teapot area into the reckoning. The average depth of the second Wall Creek sand is about 2,000 feet. The second Wall Creek area is practically defined in its present area and no further extensions of any importance may be expected from this horizon.

However, the Muddy and two sands in the Dakota formation are known to lie under the second Wall Creek sand, the Lakota sand of the Dakota group, being about 2,800 feet deep.

The Teapot Dome is thought to have its main deposit of oil in the Lakota sand because of this strike in the Salt Creek Field, and the general expression of opinion among the geologists familiar with the situation before the Mammoth started its development work, were to the effect that none, or at least very little oil could be expected in the first Wall Creek sand.



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GASOLINE AND NAPHTHA

CHICAGO DIST. (Based on Group 3)—	Oct. 23		Oct. 16		Oct. 9	
50-52 450 end point (Naphtha)	.06	.06½	.06	.06½	.06	.06½
56-58 450 end point	.06¼	.06½	.06¼	.06½	.06¼	.06½
58-60 437 end point (New Navy)	.06½	.07	.06½	.07	.06½	.07
60-62 400 end point	.08¼	.08½	.08¼	.08½	.08	.08½
64-66 375 end point	.09	.09½	.09	.09½	.09½	.09¾
68-70 360 end point	.10½	.11	.10½	.11	.10½	.11
OKLAHOMA (Group 3)—						
50-52 450 end point (Naphtha)	.06	.06½	.06	.06½	.06	.06½
56-58 450 end point	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾
58-60 437 end point (New Navy)	.06½	.06¾	.06½	.06¾	.06½	.06¾
60-62 400 end point	.08¼	.08½	.08¼	.08½	.08¼	.08½
64-66 375 end point	.09½	.09¾	.09½	.09¾	.09¼	.09¾
68-70 350-365 end point	.10¾	.11	.10¾	.11	.10¾	.11
KANSAS—						
58-60 437 end point (New Navy)	.06¾	.07	.06¾	.07	.06¾	.07
NORTH TEXAS—						
48-52 450 end point (Naphtha)	.06	.06¼	.06	.06¼	.06	.06¼
50-52 440 end point (Naphtha)	.06	.06½	.06	.06½	.06	.06½
56-58 450 end point	.06	.06½	.06	.06½	.06	.06½
58-60 437 end point (New Navy)	.06¼	.06½	.06½	.06¾	.06½	.06¾
60-62 400 end point	.08	.08¼	.08	.08½	.08	.08½
64-66 390 end point	.08¾	.09	.08¾	.09	.08½	.09
64-66 375 end point	.09	.09¼	.09¼	.09½		
NORTH LOUISIANA—						
56-58 450 end point	.07	.07¼	.06¾	.07	.06¾	.07
58-60 437 end point (New Navy)	.07¼	.07½	.07¼	.07½	.07¼	.07½
60-62 400 end point	.07¾	.08¼	.07¾	.08¼	.08¼	.08½
64-66 390 end point	.08½	.08¾	.08½	.08¾		
ROCKY MOUNTAIN STATES—						
58-60 437 end point (New Navy)	.11¼		.11¼		.11¼	
PENNSYLVANIA—						
52 Naphtha	.10½		.11		.11	
54 Naphtha	.10¾		.11¼		.11¼	
56 Gasoline	.11		.11⅝		.11⅝	
58 Gasoline	.11½		.11¾		.11¾	
60 Gasoline	.12		.12¼		.12¼	
62 Gasoline	.14		.14		.14	
64 Gasoline	.14½		.14½		.15	
66 Gasoline	.17		.17		.17½	
68-70 Gasoline	.18		.18		.18¼	

NATURAL GASOLINE

CHICAGO DIST. (Based on Group 3)—	Oct. 23		Oct. 16		Oct. 9	
Grade A, 72-78 under 375 e.p., rec. 90%	.07¾	.08¼	.07¾	.08¼	.08	.08¼
Grade B, 76-82, 375 end point, rec. 85%	.07½	.08	.07½	.08	.07¼	.07¾
Grade C, 80-88, 350 end point, rec. 78%	.07½	.07¾	.07½	.07¾	.07	.07½
OKLAHOMA (Group 3)—						
Grade A, 72-78, under 375 e.p., rec. 90%	.08	.08¼	.07¾	.08	.07¾	.08
Grade B, 76-82, 375 end point, rec. 85%	.07¾	.08	.07¾	.08	.07¾	.08
Grade C, 80-88, 350 end point, rec. 78%	.07½	.07¾	.07½	.07¾	.07½	.07¾
Grade D, 88-92, 350 end point	.07½	.07¾	.07½	.07¾	.07½	.07¾
NORTH TEXAS—						
80-84 compression	.07¼	.07½	.07¼	.07½	.07¼	.07½
84-90 compression	.07¼	.07½	.07¼	.07½	.07¼	.07½
72-76 absorption	.07½	.07¾	.07½	.07¾	.07½	.07¾
76-82 absorption	.07½	.07¾	.07½	.07¾	.07½	.07¾
NORTH LOUISIANA—						
Grade B, 76-82, 375 end point, rec. 85%	.07½	.08	.07½	.07¾	.07½	.07¾

MOTOR NATURAL GASOLINE (BLEND)

CHICAGO DIST. (Based on Group 3)—	Oct. 23		Oct. 16		Oct. 9	
60-62 450 end point	.06½	.07	.06½	.07	.06½	.06¾
64-66 450 end point	.06½	.07	.06½	.07	.06½	.06¾
OKLAHOMA (Group 3)—						
60-62 450 end point	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾
64-68 450 end point	.06½	.07	.06½	.07	.06½	.07
68-70 430-435 end point	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
NORTH TEXAS—						
58-62 440 end point	.06¼	.06⅝	.06¼	.06½	.06¼	.06½
58-60 450 end point	.06¼	.06⅝	.06¼	.06½	.06¼	.06½
PENNSYLVANIA—						
*60-62	.10½		.11½		.11½	
*64-66	.10½		.11½		.11½	
*66-68	.10½		.11½		.11½	
*68-70	.10½		.11½		.11½	

*At Sistersville, W. Va.

BURNING OIL

CHICAGO DIST. (Based on Group 3)—	Oct. 23		Oct. 16		Oct. 9	
41-43 water white Kerosene	.04	.04⅛	.04	.04⅛	.03⅞	.04⅛
42-44 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
OKLAHOMA (Group 3)—						
41-43 water white Kerosene	.04	.04¼	.03⅞	.04⅛	.03⅞	.04⅛
42-43 water white Kerosene	.04⅛	.04⅜	.04	.04¼	.04	.04¼
44-46 Kerosene Distillate	.05	.05¼	.05	.05¼	.05	.05¼
45-47 Kerosene Distillate (500 end point)	.05½	.06	.05½	.06	.05½	.06
46-48 Kerosene Distillate (480 end point)	.06	.06½	.06	.06½	.06	.06½
KANSAS—						
41-43 water white Kerosene	.04½	.04¾	.04½	.04¾	.04½	.04¾
NORTH TEXAS—						
41-43 water white Kerosene	.03¾	.04	.03¾	.04	.03¾	.04
41-43 prime white Kerosene	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
40-42 prime white Distillate	.03¼	.03½	.03¼	.03½	.03¼	.03½
NORTH LOUISIANA—						
41-43 prime white Kerosene	.03⅞	.04	.03⅞	.04	.03¾	.04
42-43 water white Kerosene	.04	.04¼	.04	.04¼	.04	.04¼
ROCKY MOUNTAIN STATES—						
40-42 prime white Kerosene	.06¾		.06¾		.06¾	
PENNSYLVANIA—						
43 Kerosene prime white	.07		.07		.06¾	
45 Kerosene water white	.07¼	.07½	.07¼	.07½	.07¼	
46 Kerosene water white	.07¾	.08	.07¾	.08	.07¾	
47 Kerosene water white	.08½		.08½		.08¼	
36 Miners' Neutral	.07		.07		.07	

FUEL OILS

CHICAGO DIST. (Based on Group 3)—	Oct. 23		Oct. 16		Oct. 9	
24-26 Fuel Oil (sellers' cars, Group 3)	.80	.85	.80	.85	.80	.90
22-24 (El Dorado)	.70	.75	.70	.75	.75	.85
18-20 (Smackover)	.65	.70	.62½	.67½	.65	.75
32-36 Gas Oil	.02¾	.02½	.02¼	.02½	.02¾	.02½
38-40 Straw distillate	.03¼	.03½	.03	.03½	.03¼	.03½
KANSAS—						
24-26 Fuel Oil	1.00	1.10	1.00	1.10	1.00	1.10
32-36 Gas Oil	.02¾	.03	.02¾	.03	.02¾	.03
38-40 Distillate	.03½	.03¾	.03½	.03¾	.03½	.03¾
OKLAHOMA (Group 3)—						
24-26 Fuel Oil (buyers' cars)	.75	.80	.75	.80	.77½	.82½
24-26 Fuel Oil (sellers' cars)	.80	.85	.80	.85	.80	.85
28-30 Fuel Oil (sellers' cars)	.90	.95	.90	.95	.90	.95
32-36 Gas Oil	.02⅝	.02½	.02⅝	.02½	.02⅝	.02¼
38-40 Straw Distillate	.03	.03¼	.03	.03¼	.03	.03¼
NORTH TEXAS—						
24-26 Fuel Oil	.65	.70	.65	.70	.70	.75
26-30 Fuel Oil	.70	.75	.70	.75	.75	.80
32-36 Gas Oil	.02¼	.02⅜	.02¼	.02⅜	.02¼	.02⅜
36-38 Gas Oil	.02½	.02⅝	.02½	.02⅝	.02½	.02⅝
38-40 Straw Distillate	.02⅞	.03⅛	.02⅞	.03⅛	.02⅞	.03⅛
NORTH LOUISIANA—						
20-22 Fuel Oil	.70		.70		.75	
32-36 Gas Oil	.02¾		.02¾	.03	.02¾	
38-40 light straw distillate	.03		.03		.03	
GULF COAST (South Texas)—						
Gas oil	.03	.03½	.03	.03½	.03½	.03¾
Fuel oil	1.10	1.15	1.10	1.15	1.15	1.30
PENNSYLVANIA—						
30-34 Fuel Oil	.05¼		.05½		.05½	
36-40 Fuel Oil	.05¾		.05⅞		.05⅞	
34 Neutral	.08		.08		.08	

ROAD OILS

OKLAHOMA (Group 3)—	Oct. 23		Oct. 16		Oct. 9	
50-60 Asphaltic content	.95	1.05	.95	1.05	.95	1.05
60-70 Asphaltic content	1.05	1.15	1.05	1.15	1.05	1.15
CHICAGO DIST. (Based on Group 3)—						
50-60 Asphaltic content (Group 3)	1.00		1.00		1.00	1.10

NEUTRAL OILS

OKLAHOMA (Group 3)—	Oct. 23		Oct. 16		Oct. 9	
Pale Neutrals:						
70-80 vis., 2½ color, 20-25 cold test	.04¼	.04½	.04¼	.04½	.04¼	.04½
100 vis., 2 color, 20-25 cold test	.06	.06½	.06	.06½	.06	.06½
100 vis., 3 color, 20-25 cold test	.05½	.06	.05½	.06	.05½	.06
150 vis., 3 color, 20-25 cold test	.11½	.12	.11½	.12	.11½	.12
150 vis., 4 color, 20-25 cold test	.11	.11½	.11	.11½	.11	.11½
180 vis., 4 color, 23-28 cold test	.13¼	.13¾	.13¼	.13¾	.13¼	.13¾
180 vis., 3 color, 23-28 cold test	.14	.14½	.14	.14½	.14	.14½
200 vis., 3 color, 23-28 cold test	.15	.15½	.15	.15½	.15	.15½
200 vis., 4 color, 23-28 cold test	.14¼	.14¾	.14¼	.14¾	.14¼	.14¾
220 vis., 3 color, 25-30 cold test	.16	.16½	.16	.16½	.16	.16½
220 vis., 4 color, 25-30 cold test	.15¼	.15¾	.15¼	.15¾	.15¼	.15¾
240 vis., 4 color, 25-30 cold test	.16¼	.16¾	.16¼	.16¾	.16¼	.16¾
280 vis., 3 color, 25-30 cold test	.19½	.20	.19½	.20	.19½	.20
280 vis., 4 color, 25-30 cold test	.18½	.19	.18½	.19	.18½	.19
300 vis., 3 color, 25-30 cold test	.20	.20½	.20	.20½	.20	.20½
Red Neutrals:						
180 vis., 5 color, 23-28 cold test	.12½	.13	.12½	.13	.12½	.13
180 vis., 6 color, 23-28 cold test	.11¾	.12¼	.11¾	.12¼	.11¾	.12¼
200 vis., 5 color, 23-28 cold test	.13½	.14	.13½	.14	.13½	.14
200 vis., 6 color, 23-28 cold test	.12¾	.13¼	.12¾	.13¼	.12¾	.13¼
220 vis., 5 color, 25-30 cold test	.14½	.15	.14½	.15	.14½	.15
220 vis., 6 color, 25-30 cold test	.13¾	.14½	.13¾	.14½	.13¾	.14½
240 vis., 5 color, 25-30 cold test	.15½	.16	.15½	.16	.15½	.16
240 vis., 6 color, 25-30 cold test	.14¾	.15¼	.14¾	.15¼	.14¾	.15¼
280 vis., 5 color, 25-30 cold test	.17½	.18	.17½	.18	.17½	.18
280 vis., 6 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
300 vis., 5 color, 25-30 cold test	.16½	.17	.16½	.17	.16½	.17
150-160 vis., 1 color, 40-50 cold test	.06½	.07	.06½	.07	.06½	.07
190-200 dark green, 40-50 cold test	.05½	.06	.05½	.06	.05½	.06
600 steam refined	.16		.16		.16	
590-600 Bright Stock	.28		.28		.28	
600-610 Bright Stock	.33		.33		.33	
Waxes:						
124-126 White Crude Scale Wax	.02¾	.02⅞	.02¾	.02⅞	.02¾	.02⅞

REFINERY AND CRUDE PRICES

Quotations on Principal Refined Products and Crude Petroleum Markets in All the American Oil Fields

PENNSYLVANIA—	Oct. 23	Oct. 16	Oct. 9
150, 3 color	.21½	.21½	.21½
180, 3 color	.24	.24	.24
200, 3 color	.26	.26	.26
220, 3 color	.29	.29	.29
600, steam refined	.10¾	.10¾	.10¾
635, steam refined	.12½	.12½	.12½
650, steam refined	.13½	.13½	.13
600, Pennsylvania flash	.16	.16	.16
630, Pennsylvania flash	.20½	.20½	.20
*550, E filtered	.14	.14	.14
*600, E filtered	.16	.16	.16
600, E filtered	.13¾	.13¾	.13¾
600, D filtered	.20½	.20½	.20½
550, E filtered	.13½	.13½	.13½
550, D filtered	.16	.16	.16
Pennsylvania Bright Stock	.31½	.31½	.31½
†122-124 White Crude Scale Wax	.03¼	.03¼	.03
†124-126 White Crude Scale Wax	.03¾	.03¾	.03⅛
300 Mineral Seal	.07¾	.07¾	.07½

*At Warren, Penn. †At New York City.

GULF COAST (South Texas)—	Oct. 23		Oct. 16		Oct. 9	
Lubricating Stocks:						
Zero Black	.06	.07	.06	.07	.06	.07
No. 2 color, 100 vis., pale oil	.07½	.09	.07½	.08½	.07	.08
No. 2½ color, 150 vis., pale oil	.09½	.11	.09½	.11	.09½	.11
No. 3 color, 200 vis., pale oil	.11	.12	.11	.12	.10	.12
No. 3½ color, 300 vis., pale oil	.14	.15½	.14	.15½	.14	.15½
No. 3½ color, 500 vis., pale oil	.16	.17	.16	.17	.16	.17
No. 3½ color, 750 vis., pale oil	.23	.24	.22½	.24½	.22½	.23½
No. 1½ color, 150 vis., pale, filtered	.20½	.21½	.20½	.21½	.20½	.21½
No. 2 color, 200 vis., pale, filtered	.23½	.25	.23½	.25	.23½	.25
No. 2½ color, 500 vis., pale, filtered	.31	.33	.31	.33	.31	.33
No. 2½ color, 750 vis., pale, filtered	.40	.41	.40	.41	.40	.41
No. 5 color, 200 vis., red oil	.10	.11	.10	.11	.09	.10½
No. 5 color, 300 vis., red oil	.12	.13	.12	.13	.12	.13
No. 5 color, 500 vis., red oil	.14	.15	.14	.15	.14	.15
No. 5 color, 750 vis., red oil	.21	.22	.21	.23	.22	.23

NEW YORK DOMESTIC MARKET

	Oct. 23	Oct. 16	Oct. 9
Motor Gasoline:			
Greater New York, in steel barrels	.16½	.18½	.18½
New York State (outside Greater New York and New England, tank wagon	.16½	.18½	.18½
New Jersey, tank wagon	.16½	.16½	.18½
V.M.P. Naphtha, in steel barrels	.15½	.17½	.17½
Kerosene:			
Greater New York, tank wagon	.14	.14	.14
New York State (outside Greater New York and New England, tank wagon	.14	.14	.14
Gasoline in bulk, delivered at N. Y.	.08¼	.10½	.10½
New Jersey, tank wagon	.13	.13	.13
Lubricating Oil (Industrial) at refinery, Bayonne, N. J.:			
Cylinder, extra light filtered, in barrels	.36½	.36½	.36½
Cylinder, light filtered, in barrels	.31½	.31½	.31½
Cylinder, Bright Stock	.44	.44	.44
Cylinder, steam refined (600)	.21½	.21½	.21½
Black, in bulk	.09½	.09½	.09½
Bloomless, white, 30-31 gravity, 170 vis	.43	.43	.43
Bloomless, 885 specific gravity	.16½	.16½	.16½
Red Paraffin:			
170 viscosity	.18½	.18½	.18½
212 viscosity	.20	.20	.20
265 viscosity	.22	.22	.22
295 viscosity	.25	.25	.25
Paraffin, 903 specific gravity	.22½	.22½	.22½
Lubricating Oil (motor), discount to dealers:			
Cylinder, in barrels	1.00	1.00	1.00
Steam tractors, in barrels	1.00	1.00	1.00
Transmission and differential, in barrels	.09½	.09½	.09½
Motor Grease, in barrels, pounds	.13	.13	.13
*Fuel Oil:			
Bunker Oil, 14 plus, delivered in barges, bbl.	1.45	1.45	1.45
Diesel Oil, at refinery, gallon	.03¾	.03¾	.03¾
Furnace oil, tank wagon, gallon	.10	.10	.10
Gas Oil, delivered in New York	.04¼	.04¼	.04¼
Wax, fully refined:			
120-122 a.m.p.	.03⅞	.03⅞	.03⅞
125-127 a.m.p.	.03⅞	.03¾	.03¾
130-132 a.m.p.	.04¼	.04¼	.04¼
135-137 a.m.p.	.05¼	.05¼	.05¼

*Lighterage, 6.5c a barrel extra.

NEW YORK EXPORT PRICES

	Oct. 23	Oct. 16	Oct. 9
Motor Gasoline, in cases, gallon	.25.15	.25.15	.25.15
Motor Gasoline, U. S. Navy, spec., gallon	.11.50	.11.50	.11.5
Naphtha, 60° F., 59-61 spec. grav.	.12.50	.12.50	.12.5
Naphtha, 60° F., 63-66 spec. grav.	.14.50	.14.50	.14.5
Naphtha, 60° F., 66-68 spec. grav.	.16.00	.16.0	.16.0
Kerosene:			
Standard white, in bulk, gallon	.07	.06	.05½
Standard white, in barrels, gallon	.14	.13	.12½
Standard white, in cases, gallon	.16.9	.15.9	.15.4
Water white, in bulk, gallon	.08	.07	.06½
Water white, in barrels, gallon	.15	.14	.13½
Water white, in cases, gallon	.17.9	.16.9	.16.4

CRUDE OIL PRICES

October 9.—Standard Oil Co. of California reduced California crudes of 22° gravity and above from 2 to 28 cents a barrel. The Texas Co. reduced North and Central crudes of 33° to 39.9° gravity, 20 cents and 40° gravity and above, 25 cents. Company agreed to take 100 per cent of the runs.

October 13.—Magnolia Petroleum Co. announced a new schedule for Texas crudes, meeting The Texas Co. schedule on grades above 33° gravity and putting into effect the prices paid for Healdton, Okla., grade oil on oils below 33° gravity.

October 17.—Gulf Pipe Line Co. announced price of 75 cents on Gulf Coast heavy crudes, except Blue Ridge and Pierce Junction, where the new price was 65 cents.

October 19.—Humble Oil & Refining Co. announced a reduction of 10 cents on oil below 30° gravity and a reduction of 20 cents on the four higher grades, applying to crudes in North and North Central Texas. New prices range from 80 cents to $1.30.

October 20.—Osage, Wyoming, crude was reduced 15 cents to $1.20.

Oklahoma and Kansas

Below 33°	$ .90
33° to 39.9°	1.30
40° and above	1.75
(Magnolia Petroleum Co., and The Texas Co., Healdton grade)	
Below 28°	$ .50
28° to 30.9°	.70
31° to 32.9°	.90

Arkansas and North Louisiana

Caddo, 38° and above	$1.25
35° to 37.9°	1.15
32° to 34.9°	1.10
Below 32°	.75
Homer, 35° and above	1.25
33° to 34.9°	1.15
31° to 32.9°	1.10
Below 31°	.75
Haynesville, 33° and above	1.10
Below 33°	1.00
El Dorado, 33° and above	1.25
Below 33°	1.10
Bull Bayou, 38° and above	1.15
35° to 37.9°	1.05
32° to 34.9°	1.00
De Soto	1.25
Crichton	.90
Bellevue	.75
Smackover, 26° and above	.75
25° to 25.9°	.60
24° to 24.9°	.50
Below 24°	.40
*Stephens, Ark., 30° and above	.85
28° to 29.9°	.80
26° to 27.9°	.75
23° to 25.9°	.65
Below 23°	.50

*Posted by Atlantic Oil Producing Co.

Wyoming and Montana

Rock Creek, (Wyo.)	$ .90
Salt Creek	.90
Big Muddy	.75
Mule Creek	.75
Grass Creek	1.35
Elk Basin	1.35
Lance Creek	1.20
Osage	1.20
Cat Creek (Mont.)	1.35
Sunburst (Mont.)	.70
Greybull and Torchlight	1.35
Hamilton Dome	.90
Lander and Lost Soldier based on contracts covering entire production of fields.	

North Texas and North Central Texas

Corsicana light	$1.00
Corsicana heavy	.50
Mexia	1.00
Currie	1.00
Powell	1.00
Moran, Burkburnett, Electra, Archer County, Stephens County, Strawn, Ranger, Desdemona, Pioneer and Young County.	
Below 33°	$ .90
33° to 39.9°	1.30
40° and above	1.75
The Texas Co. prices:	
33° to 39.9°	1.10
40° and above	1.25
Humble Oil and Refining Co. prices:	
Below 30°	.80
30° to 32.9°	.90
33° to 35.9°	1.00
36° to 38.8°	1.15
39° and above	1.30
Magnolia Petroleum Co. prices:	
Below 28°	.50
28° to 30.9°	.70
31° to 32.9°	.90
33° to 39.9°	1.10
40° and above	1.25

Gulf Coast

Gulf Pipe Line Co., Goose Creek, Hull, Sour Lake, Batson, Saratoga, Spindletop, Orange, Vinton, Edgerly, Jennings	$ .75
Grade "B," Pierce Junction, Blue Ridge	.65
The Sun Pipe Line Co., Grade "A," Humble, Hull, Goose Creek, Orange, Spindletop, Saratoga, Batson, Dayton, Sour Lake	1.00
Humble Pipe Line Co., Goose Creek, Hull, West Columbia, Orange	1.00
Grade "B," Pierce Junction	.90
Texas Pipe Line Co., Humble, West Columbia, Orange, Sour Lake, Saratoga, Batson, Vinton, Jennings, Markham	1.00
Sinclair Pipe Line Co., West Columbia, Damon Mound	1.00

California

14° to 19.9°	$ .60
20° to 20.9°	.61
21° to 21.9°	.62
22° to 22.9°	.63
23° to 23.9°	.64
24° to 24.9°	.65
25° to 25.9°	.66
26° to 26.9°	.67
27° to 27.9°	.68
28° to 28.9°	.69
29° to 29.9°	.70
30° to 30.9°	.71
31° to 31.9°	.72
32° to 32.9°	.73
33° to 33.9°	.74
34° to 34.9°	.75
35° gravity and above	.76

Eastern States

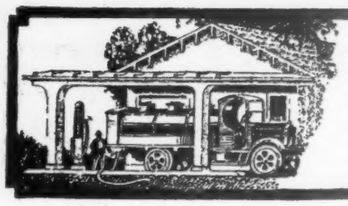
Penna Grade Oil in New York Transit Lines	$2.75
Bradford District Oil in National Transit Lines	$2.75
Penna Grade Oil in National Transit Lines	2.50
Penna Grade Oil in South West Pa. Pipe Lines	2.50
Penna Grade Oil in Eureka Pipe Line Lines	2.50
Penna Grade Oil in Buckeye Pipe Line Lines	2.50
Corning Grade Oil in Buckeye Pipe Line Lines	1.45
Cabell Grade Oil in Eureka Pipe Line Lines	1.35
*Somerset Medium Oil in Cumberland Pipe Line Lines	1.25
*Somerset Light Oil in Cumberland Pipe Line Lines	1.40
Ragland Grade Oil in Cumberland Pipe Line Lines	.75
Lima	1.68
Wooster	1.50
Illinois	1.47
Indiana	1.48
Princeton	1.47
Plymouth	.85
Waterloo	.95
†Petrolia, Canada	2.28
†Oil Springs, Canada	2.35

*Somerset oil commands 6 cents over the above posted price.
†Plus Government bounty of 52½c.

Mexican Crude

*Tuxpam (f.o.b. Mexican ports)	$1.00
†Panuco (f.o.b. Mexican ports)	.55
Tuxpam (New York)	1.55
Panuco (New York)	.97

*Plus 30.34c tax. †Plus 16.93c tax. Prices based on contracts.



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, Oct. 23

STANDARD OIL CO. (INDIANA)

Main Service Station Price

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Chicago district.	13.4	..	15.4	10.

Tank wagon prices on Jan. 25, 1921, down 2c on g., 3c on k., Feb. 1, both down 2c; April 27 both down 3c; July 25 g. down 2c; Oct. 15, g. up 1c; Oct. 23, k. up 1c; Nov. 9, g. up 1¼c; k. 1c; April 10, 1922, g. up 1½c; May 8, g. up 1c; June 27, both up 1c; July 19, g. down 2c; k. down 1c; Oct. 10, g. down 2c; Oct. 31, g. down 1c; Feb. 5, 1923, g. up 1c; Feb. 20, g. up 1c; Aug. 14, g. down 6.6c; Oct. 4, k. down 1½c.

Decatur, Ill.	14.2	..	16.2	10.5
East St. Louis.	12.85	..	15.1	9.6
Joliet	13.4	..	15.4	10.7
Peoria	14.2	..	16.2	10.5
Quincy	14.0	..	16.0	10.3
Davenport, Ia.	14.5	..	16.5	10.9
Des Moines	12.5	..	14.5	10.9
Keokuk	14.5	..	16.5	10.9
Sioux City	14.0	..	16.0	10.5
Duluth, Minn.	15.2	..	17.2	11.6
Minneapolis	12.9	..	14.9	11.6
La Crosse, Wis.	15.2	..	17.2	11.4
Milwaukee	14.0	..	16.0	10.2
Madison	14.3	..	16.3	10.5
Detroit, Mich.	10.8	..	12.8	10.5
Grand Rapids	14.7	..	16.7	11.1
Saginaw	14.9	..	16.9	11.3
Evansville, Ind.	16.0	2.0	18.0	10.5
Fort Wayne	16.4	2.0	18.4	10.9
Indianapolis	16.2	2.0	18.2	10.7
South Bend	16.4	2.0	18.4	10.9
Fargo, N. D.	16.6	1.0	18.6	13.6
Huron, S. D.	16.0	2.0	16.0	12.1
Sioux Falls	15.5	2.0	15.5	11.6
*Kansas City	11.9	1.0	13.9	9.3
Springfield	13.8	..	15.8	10.2
St. Louis	12.1	..	14.4	10.0
*St. Joseph	14.3	.5	16.3	10.2
Wichita, Kans.	13.8	..	15.8	9.8

*City tax.

PENNSYLVANIA-DELAWARE AND PART NEW ENGLAND

Atlantic Refining Co.

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Pittsburgh, Pa.	16.0	*	21.0	14.0
Philadelphia	16.0	*	21.0	14.0
Scranton	16.0	*	21.0	14.0
Allentown	16.0	*	21.0	14.0
Altoona	16.0	*	21.0	14.0
Dover, Del.	17.0	1.0	20.0	14.0
Wilmington	17.0	1.0	20.0	14.0
Providence, R. I.	16.5	..	19.0	14.0
Springfield, Mass	15.5	..	18.0	14.0
Worcester	15.5	..	18.0	14.0
Boston	15.5	..	18.0	14.0
Hartford, Conn.	17.5	1.0	20.0	14.0
New Haven	17.5	1.0	20.0	14.0

*Pennsylvania tax of 2 cents and Connecticut tax of 1 cent are collected by the dealer and paid by him direct to the State.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Atlanta, Ga.	15.0	3.0	20.0	15.0
Augusta	18.0	3.0	20.0	14.0
Macon	18.0	3.0	20.0	14.5
Savannah	16.0	3.0	18.0	13.0
Birmingham, Ala.	16.0	2.0	18.0	14.5
Mobile	15.0	2.0	17.0	13.5
Montgomery	16.0	2.0	18.0	15.0
Clarksdale, Miss.	14.0	1.0	16.0	13.0
Jackson	14.0	1.0	16.0	10.0
Natchez	13.5	1.0	15.5	12.5
Vicksburg	13.5	1.0	15.5	12.5
Jacksonville, Fla	16.0	3.0	18.0	13.0
Miami	18.0	3.0	20.0	14.5
Pensacola	16.0	3.0	18.0	13.5
Tampa	16.0	3.0	18.0	13.0
Covington, Ky.	17.0	1.0	19.0	13.0
Lexington	16.0	1.0	17.0	14.0
Louisville	14.0	1.0	16.0	13.0

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Denver, Colo.	15.0	2.0	17.0	12.5
Glenwood Spgs.	21.0	2.0	....	16.5
Pueblo	17.0	2.0	19.0	12.5
Basin, Wyo.	16.0	1.0	....	13.0
Casper	14.0	1.0	16.0	11.0
Cheyenne	16.5	1.0	17.5	13.0
Cody	17.0	1.0	....	14.0
Lander	16.0	1.0	....	13.0
Billings, Mont.	19.5	2.0	21.5	14.5
Butte	21.0	2.0	23.0	15.0
Great Falls	21.0	2.0	23.0	16.0
Helena	21.0	2.0	23.0	16.0
Miles City	20.5	2.0	22.5	15.5
Boise, Idaho	21.0	3.0	22.0	18.0
Salt Lake, Utah	21.0	2.5	27.0	15.5
Ogden	21.0	2.5	23.0	15.5
Albuquerque, N. M.	18.0	1.0	20.0	15.5

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Newark, N. J.	16.5	..	...	13.0
Atlantic City	16.5	..	....	13.0
Annapolis, Md.	17.0	1.0	20.0	13.0
Baltimore	17.0	1.0	20.0	12.0
Cumberland	17.0	1.0	20.0	14.0
Washington, D. C.	16.0	..	19.0	12.5
Norfolk, Va.	19.0	3.0	21.0	12.0
Petersburg	19.0	3.0	21.0	13.5
Danville	19.0	3.0	21.0	14.0
Richmond	19.0	3.0	21.0	12.5
Roanoke	19.0	3.0	21.0	14.0
Keyser, W. Va.	18.0	2.0	....	14.0
Charleston	18.0	2.0	....	12.5
Parkersburg	18.0	2.0	....	11.0
Wheeling	18.0	2.0	....	12.5
Charlotte, N. C.	19.0	3.0	....	13.5
Hickory	19.0	3.0	....	14.0
Mt. Airy	19.0	3.0	....	13.5
Salisbury	19.0	3.0	....	14.0
Charleston, S. C.	19.0	3.0	....	13.5
Columbia, S. C.	19.0	3.0	21.0	13.5

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Dallas, Tex.	7.0	1.0	10.0	8.0
Fort Worth	7.0	1.0	9.0	10.0
Houston	14.0	1.0	18.0	11.0
San Antonio	7.0	1.0	10.0	9.0
El Paso	14.5	1.0	17.0	13.0
Muskogee, Okla.	12.0	1.0	16.0	9.0
Oklahoma City	12.0	1.0	15.0	9.0
Tulsa	11.0	1.0	14.0	9.0
Ft. Smith, Ark.	15.0	3.0	18.0	11.0
Little Rock	15.0	3.0	18.0	12.0
Texarkana	15.0	3.0	18.0	11.0

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
New Orleans, La.	11.5	1.0	14.5	11.0
Alexandria	12.5	1.0	15.5	12.0
Baton Rouge	11.0	1.0	14.0	10.5
Lake Charles	12.5	1.0	15.5	12.0
Shreveport	12.5	1.0	15.5	12.0
Memphis, Tenn.	14.0	2.0	17.0	13.0
Chattanooga	14.5	2.0	17.5	13.5
Knoxville	15.5	2.0	18.5	14.0
Nashville	14.5	2.0	17.5	13.0
Bristol	16.0	2.0	19.0	14.5
Little Rock, Ark.	15.5	3.0	18.5	12.0
West Helena	15.5	3.0	18.5	12.0

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Albany, N. Y.	15.5	..	18.0	13.0
*New York	16.5	..	18.5	14.0
Buffalo	14.0	..	18.5	14.0
Rochester	15.5	..	18.0	13.0
Syracuse	15.0	..	17.0	12.0
Boston, Mass.	15.5	..	18.0	12.0
Providence, R. I.	16.5	..	20.0	14.0
Augusta, Me.	16.5	1.0	21.0	14.0
Manchester	16.5	1.0	21.0	14.0
Burlington, Vt.	16.5	1.0	21.0	14.0

*Price in steel barrels.

OHIO

Standard Oil Co. (Ohio)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
All Ohio points.	17.0	..	19.0	13.0

PACIFIC COAST DISTRICT

Standard Oil Co. (California)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
San Francisco.	16.0	2.0	18.0	15.5
Los Angeles	15.0	2.0	17.0	15.5
Fresno	14.5	2.0	17.5	17.5
Reno, Nev.	17.5	2.0	20.5	19.0
Portland, Ore.	16.0	3.0	19.0	16.5
Seattle, Wash.	14.0	1.0	17.0	16.5
Tacoma	14.0	1.0	17.0	16.5
Phoenix, Ariz.	18.5	3.0	21.5	21.5
Honolulu, H.	13.5	..	16.5	17.5
Juneau, Alaska	14.5	..	17.5	18.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline: Tank wagon	Gasoline: Incids tax of	Gasoline: Service station	Kero. Tank wagon
Omaha	14.25	..	16.25	10.50
Crawford	15.0	..	.....	11.25
McCook	15.75	..	17.75	12.00
Norfolk	15.75	..	16.75	11.00
North Platte.	15.75	..	17.75	11.75
Scots Bluff.	15.25	..	17.25	11.25

TANK WAGON CHANGES

Effective October 17, the Atlantic Refining Co. reduced gasoline 2 cents in the entire territory with the exception of Massachusetts where the reduction was 3 cents. Effective same date, the Standard Oil Co. of New York reduced gasoline prices from 2 to 2½ cents, with the exception of Massachusetts where the reduction was 3 cents. Effective same date, Standard Oil Co. of Louisiana reduced gasoline 2 cents in Louisiana, Tennessee and Arkansas.

Effective October 18, the Standard Oil Co. of New Jersey reduced gasoline tank wagon 2 cents in the entire territory with the exception of the State of New Jersey, where a similar reduction was made on October 17.

Effective October 19, the Standard Oil Co. of Indiana reduced the tank wagon price at Detroit, Mich., 2 cents.

Effective October 20, the Magnolia Petroleum Co. reduced the kerosene tank wagon price at Dallas 2 cents. The same company reduced the kerosene tank wagon price at San Antonio 2 cents. The same company increased the tank wagon price for gasoline at Oklahoma City 2 cents and the filling station price 1 cent.

EXPORT KEROSENE UP

NEW YORK, Oct. 23.—The Standard Oil Co. of New Jersey advanced all grades of kerosene for export duty 1 cent per gallon, effective today.

Fifty-barrel Well at Plumer, Pa.; 60-bbl. Richburg, N. Y.

OIL CITY, Pa., Oct. 20.—The general opinion of oil men that producers of the 40 and 50-bbl. type have become obsolete in this section of Pennsylvania was disproven by the bringing in of a well estimated at this amount on the Alonzo Clark farm, 3 miles northwest of Plumer, by Robert Foggan, Pleasantville resident.

The well was put on pump, after some trouble in obtaining tankage, and 130 bbls. were run to the pipe lines during the day's pumping. Some of this was from other wells on the lease, but the majority was from the new producer. The well is a third sander, being estimated at 1,100 feet in that district. The fluid is rather light in weight and amber in color, being regular third sand oil, similar to Queen sand production. When drilled in and shot, the hole showed 625 feet of fluid and constant bailing could not decrease the amount to less than 125 feet of fluid. The nearest estimate at the present time is a 40 to 50-bbl. producer.

This important strike is in the midst of settled territory, another producing well being located but 12 feet from it. Three weeks ago Mr. Foggan drilled to the first sand and placed a shot, obtaining a 16-bbl. producer, a very good well for that supposedly depleted territory, then moving the rig but a few feet, drilling to the third sand and striking the present producer. It is thought a basin or crevice holding seepage oil from the sand was struck. At any rate, the amount of the production is a complete and agreeable surprise to the oil men of this vicinity who have been forced by experience to regard a 10-bbl. well as a lucky find.

Some of the haste and excitement of early days was demonstrated by the owner of the well, who in his desire to obtain tankage sufficient to take care of the production, rushed to Titusville and, obtaining a huge tank, loaded it upon the top of a hill not far from Titusville. The tank upset off the wagon and rolled over a hundred feet down the hill before coming to a stop. The tank was rescued and set upon the location.

WELLSVILLE, N. Y., Oct. 20.—Jennings & Fraire have just completed at Richburg, N. Y., one of the largest wells of recent months. It was pumped for several days and then shot, after which it started at 60 bbls. a day. It is located in flood territory.

CALIFORNIA RECEIPTS AND PETROLEUM IMPORTS

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended October 13, totaled 1,717,000 barrels, a daily average of 245,286 barrels, against 1,460,000 barrels a daily average of 208,571 barrels for the week ended October 6.

California Oil Receipts at Atlantic and Gulf Coast Ports
(Barrels of 42 Gallons)

At Atlantic Coast Ports:	Wk. Ended Oct. 13	Wk. Ended Oct. 6
Baltimore	162,000	240,000
Boston	75,000	.....
New York	979,000	420,000
Philadelphia	168,000	248,000
Others	75,000	216,000
Total	1,479,000	1,131,000
Daily average	211,286	161,571
At Gulf Coast Ports:		
New Orleans and Baton Rouge	238,000	*329,000
Daily average	34,000	47,000
Total Atlantic and Gulf Coast Ports	1,717,000	1,460,000
Daily average	245,286	208,571

*Revised.

Imports of Petroleum at U. S. Ports

According to figures collected by the American Petroleum Institute, imports of petroleum, crude and refined oils at the principal ports for the week ended October 13, totaled 1,370,000 barrels, a daily average of 195,714 barrels, compared with 1,761,000 barrels, a daily average of 251,571 barrels for the week ended October 6.

Imports of Petroleum at U. S. Ports
(Barrels of 42 Gallons)

At Atlantic Coast Ports:	Wk. Ended Oct. 13	Wk. Ended Oct. 6
Baltimore	45,000	112,000
Boston	70,000	41,000
New York	284,000	286,000
Philadelphia	.....	233,000
Others	60,000	400,000
Total	459,000	1,071,000
Daily average	65,571	153,000
At Gulf Coast Ports:		
Galveston district	364,000	208,000
New Orleans and Baton Rouge	402,000	*343,000
Port Arthur and Sabine district	130,000	134,000
Tampa	15,000	.....
Total	911,000	690,000
Daily average	130,143	98,571
At all U. S. Ports:		
Total	1,370,000	1,761,000
Daily average	195,714	251,571

*Revised.

STANDARD WINS RAIL SUIT

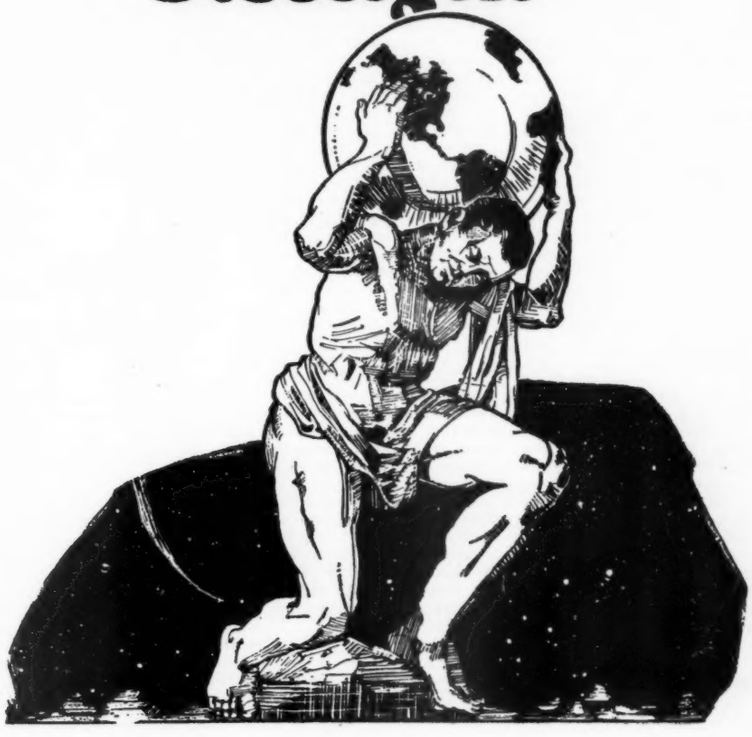
CHICAGO, Oct. 23.—The Standard Oil Co. of Indiana has won a suit against the United States Railroad Commission for damages sustained by the destruction of its warehouse at Grand Rapids, Mich., as a result of a collision while the railroads were under Government control. The State court awarded the Standard $105,000 damages. The suit was appealed to the United States Supreme Court, which declined to rehear the case.

PANHANDLE REFINERY

WICHITA FALLS, Tex., Oct. 23.—The Panhandle Refining Co. is reported operating at capacity of 4,500 bbls. daily.

Youngstown TANKS
STANDARDIZED

Strength



OUR golden rule of business is to build a quality product, sell it at a fair price and make a profit and back our customer in the service he should expect from the product we sell him. From this policy we have developed a stronghold in the storage tank industry that distinguishes this company as one of the leaders.

In all parts of the civilized world "Youngstown Tanks" are used and they dot the earth in increasing thousands each year. Built in standardized designs in capacities ranging from 400 gals. to 80,000 bbls. these tanks bear an unqualified five year guarantee.

Write for Bulletin

Bulletin 500, illustrates and describes "Youngstown Tanks." It will be mailed free to executives requesting it.

THE YOUNGSTOWN BOILER & TANK CO.

J. O. Keene
President.

No. 5 of a Series of Advertisements

The YOUNGSTOWN BOILER & TANK Company
Youngstown Ohio · U.S.A.

Report of Proposed A.P.I. Pipe Standards

Committee Details the Results of Its Work so Far, and in Presenting It Asks for Further Criticism and Suggestions

The preliminary report of the committee on standardization of tubular goods of the American Petroleum Institute has been prepared. In connection with the publication below of this report, The Oil and Gas Journal has been requested to ask manufacturers, producers, production engineers and others interested that the committee's results thus far achieved be carefully studied and that if there are any criticisms or suggestions to be offered, that they be made to any one of the vice chairmen without delay.

The names and business connections of the vice chairmen are as follows: C. D. Terry, National Tube Co., Pittsburgh, Pa.; H. V. Wille, American Society for Testing Materials, 1315 Spruce street, Philadelphia, Pa.; C. D. Watson, chief engineer, Carter Oil Co., western division, Tulsa, Okla.; N. S. Wilson, Midwest Refining Co., Casper, Wyo., and Chester W. Brown, Union Oil Co., Los Angeles, Calif.

The committee on standardization is desirous of making its final report as early as possible and suggestions should be filed before November 6.

J. Edgar Pew of Dallas, Tex., vice president of the Sun Oil Co. and chairman of the standardization committee, has written to the various vice chairmen, detailing what had been done on tubular goods specifications. Extracts from his letter and a copy of the proposed specifications together with a table showing the proposed American Petroleum Institute casing sizes, are here given.

Chairman Pew's Letter

In his letter to the vice chairmen, Mr. Pew said:

"The committee which has been working on the details of the A.P.I. tubular goods specifications, as a practical working agreement has been reached between all the operators in the different fields, is preparing now to make its report to you gentlemen covering the various features of this specification for your further criticism and suggestions.

"In order to meet special rotary drilling conditions in California some of the old time sizes of pipe are retained.

"For further deeper drilling than was contemplated when this committee's work was undertaken, the committee will recommend that additional strength will be had from the use of higher carbon steel. In this matter we are of the opinion that 4¾-inch, 16-pound casing, by increasing the carbon in the steel, can be set at 7,000 feet with a factor of safety of 2; also that 7¼-inch, 23-pound casing can be set at the same depth with a factor of safety of 1.85.

"This committee has had much valuable assistance from both the manufacturers and from the American Society of Testing Materials. The committee has carefully avoided specifying any trade name or process of manufacture in any manner that might prove prejudicial to other processes.

"The high-carbon seamless casing specifications are incomplete on account of the lack of sufficient data, but they should be sufficient to indicate what is needed. We have left off the carbon content as the tensile strength indicated fixes the quantity of carbon required up to that strength.

"It has been suggested, also, that we are lacking in data as to the collapsing pressures of high carbon steel, but the records we have show that the samples tested gave 50 per cent greater strength than that indicated by the Stewart Formula for lap weld pipe. It is possible that these tests have not been carried far enough to warrant this definite statement. We have considered all the information we could gather, and all that seemed available on the subject.

The Question of Couplings

"The distance pipe should screw into the coupling is another point which is possibly open to question. I think all are argeed, however, that a definite standard for all manufactures of A.P.I. pipe should be adopted on this. Any suggestions will be appreciated after you have examined these specifications.

"The tolerance allowance in tapers is closer than suggested by the manufacturers and by the American Society for Testing Materials, but probably more trouble arises for the operator from variations in these tolerances of tapers than from any other cause, and as it is a question of more care only on the part of the manufacturers, it is our judgment that this minimum tolerance specified should be insisted on.

"The reference to 5 per cent and 10 per cent under and over in weight as recommended by the manufacturers has been accepted by this committee, but in doing so we believe that the specification written as to variations in diameter of only 1 per cent will largely govern this."

Mr. Pew sent to the various vice chairmen a copy of the proposed specifications for steel and iron pipe for oil country tubular goods, and in his letter he reviews the more important changes from the original specifications as prepared by the American Society for Testing Materials. His letter then continues:

"This committee is of the opinion that in order to keep the cost of A.P.I. pipe within reasonable limits, a more liberal specification is necessary as to many points than might otherwise be desirable, but in making this specification the purchaser is entitled to the best average of the pipe made under the specifications and the A.P.I. stamp on this pipe should be an assurance to him that he is getting the best average pipe.

"Purchasers may order special pipe, and of a heavier specification. At the inspection of this pipe certain pipe would be rejected that might still come within the limits of the A.P.I. specifications, but the acceptance of such pipe as complying with the A.P.I. specification would only reduce the average of the pipe which the A.P.I. purchaser would receive, and, to a certain extent, would increase his percentage of trouble. There is nothing to prevent the manufacturer from selling such rejected pipe, either pipe rejected under the special specifications referred to or pipe rejected under the A.P.I. specifications, but the purchaser is entitled to know what he is buying.

Drill Pipe

"As a further suggestion as to specifications for drill pipe, this committee realizes that drill pipe is subjected to greater strains, and a strain that is different from those to which other tubular goods are subjected. It is our understanding that the mills are making some tests to ascertain the best method of giving a more complete test to drill pipe to provide for these strains. We also hope

(Continued on Page 95)

PROPOSED AMERICAN PETROLEUM INSTITUTE CASING
"Size" of A.P.I. Casing Indicates Outside Diameter

	Diameters			Weight per Foot					Test Pressure, Pounds				Couplings			†Depth in ft. for compression factor of safety of 2 for lap weld steel
Size	External	Internal	Upset	Thickness	Plain ends	Threads and couplings	Upset casing without couplings	Upset casing with threads and couplings	Threads per inch	Steel	Open hearth iron	Wrought iron	Diameter for casing not upset	Length	Diameter for upset casing	
*4¾	4.75	4.082	.....	.334	15.752	16.00	.....	.....	10	2200	1900	1700	5.364	6⅝	.....	5420
4¾	4.75	4.082	4.9843	.334	.....	.....	16.03	16.28	10	2200	1900	1700	.....	7	5.65	5420
5⅛	5.75	5.29	.....	.23	13.56	14.00	.....	.....	10	1200	1100	900	6.5625	8½	.....	2390
5⅛	5.75	5.19	.....	.28	16.36	17.00	.....	.....	10	1500	1300	1100	6.5625	8½	.....	3260
5⅛	5.75	5.09	.....	.33	19.10	20.00	.....	.....	10	1800	1600	1300	6.5625	8½	.....	4130
5¼	5.75	5.09	5.9843	.33	.....	.....	19.36	20.20	10	1800	1600	1300	.....	8½	6.75	4130
5¼	5.75	4.99	.....	.38	21.80	23.00	.....	.....	10	2100	1800	1600	6.5625	8½	.....	5000
5¼	5.75	4.99	5.9843	.38	.....	.....	22.06	22.90	10	2100	1800	1600	.....	8½	6.75	5000
*6⅝	6.625	6.049	.....	.288	19.491	20.00	.....	.....	10	1400	1200	1000	7.390	7⅝	.....	2740
*6⅝	6.625	5.921	.....	.352	23.582	24.00	.....	.....	10	1700	1500	1200	7.390	7⅝	.....	3710
*6⅝	6.625	5.855	.....	.385	25.658	26.00	.....	.....	10	1800	1600	1400	7.390	7⅝	.....	4200
*6⅝	6.625	5.791	.....	.417	27.648	28.00	.....	.....	10	2000	1700	1500	7.390	7⅝	.....	4690
8⅛	8.125	7.485	.....	.32	26.68	28.00	.....	.....	10	1200	1100	900	9.0937	8½	.....	2330
8⅛	8.125	7.385	.....	.37	30.65	32.00	.....	.....	10	1400	1200	1100	9.0937	8½	.....	2940
8⅛	8.125	7.285	.....	.42	34.56	36.00	.....	.....	10	1600	1400	1200	9.0937	8½	.....	3560
8⅛	8.125	7.185	.....	.47	38.42	40.00	.....	.....	10	1800	1600	1400	9.0937	8½	.....	4180
8¼	8.125	7.185	8.3693	.47	.....	.....	38.80	40.31	10	1800	1600	1400	.....	8½	9.30	4180
*8⅝	8.625	8.017	.....	.304	27.016	28.00	.....	.....	10	1100	1000	800	9.627	8¾	.....	1920
*8⅝	8.625	7.921	.....	.352	31.101	32.00	.....	.....	10	1300	1000	900	9.627	8¾	.....	2470
*8⅝	8.625	7.825	.....	.400	35.137	36.00	.....	.....	10	1400	1300	1100	9.627	8¾	.....	3030
*8⅝	8.625	7.775	.....	.425	37.220	38.00	.....	.....	10	1500	1300	1100	9.627	8¾	.....	3320
*8⅝	8.625	7.651	.....	.487	42.327	43.00	.....	.....	10	1800	1500	1300	9.627	8¾	.....	4040
10¾	10.75	10.05	.....	.35	38.88	41.00	.....	.....	8	1000	900	800	11.75	8½	.....	1650
10¾	10.75	9.95	.....	.40	44.22	46.00	.....	.....	8	1200	1000	900	11.75	8½	.....	2100
10¾	10.75	9.85	.....	.45	49.50	52.00	.....	.....	8	1300	1100	1000	11.75	8½	.....	2580
10¾	10.75	9.76	.....	.495	54.22	56.00	.....	.....	8	1400	1300	1100	11.75	8½	.....	3000
*11¾	11.75	11.00	.....	.375	45.557	47.00	.....	.....	10	1000	800	700	12.866	8¾	.....	1690
*11¾	11.75	10.72	.....	.489	58.811	60.00	.....	.....	10	1300	1100	1000	12.866	8¾	.....	2560
13⅜	13.375	12.715	.....	.33	45.97	49.00	.....	.....	8	800	700	600	14.375	9	.....	860
13⅜	13.375	12.615	.....	.38	52.73	55.00	.....	.....	8	900	800	600	14.375	9	.....	1230
13⅜	13.375	12.515	.....	.43	59.44	62.00	.....	.....	8	1000	900	700	14.375	9	.....	1610
13⅜	13.375	12.415	.....	.48	66.10	69.00	.....	.....	8	1100	1000	800	14.375	9	.....	2000
16	16.00	15.375	.....	.3125	52.36	56.00	.....	.....	8	600	500	400	17.00	9	.....	425
16	16.00	15.250	.....	.375	62.58	66.00	.....	.....	8	700	600	500	17.00	9	.....	740
16	16.00	15.125	.....	.4375	72.72	76.00	.....	.....	8	800	700	600	17.00	9	.....	1130
16	16.00	15.010	.....	.495	81.97	85.00	.....	.....	8	1000	800	700	17.00	9	.....	1500
18⅝	18.625	17.856	.....	.385	75.00	79.00	.....	.....	8	600	500	500	19.75	9	.....	510
18⅝	18.625	17.755	.....	.435	84.51	89.00	.....	.....	8	700	600	500	19.75	9	.....	730
18⅝	18.625	17.656	.....	.485	93.96	98.00	.....	.....	8	800	700	600	19.75	9	.....	1000
21½	21.50	20.71	.....	.395	89.04	95.00	.....	.....	8	600	500	400	22.9375	9	.....	360
21½	21.50	20.61	.....	.445	100.07	106.00	.....	.....	8	600	500	500	22.9375	9	.....	510
21½	21.50	20.51	.....	.495	111.00	117.00	.....	.....	8	700	600	500	22.9375	9	.....	700
24½	24.50	23.85	.....	.325	83.91	92.00	.....	.....	8	400	350	300	26.125	9	.....	130
24½	24.50	23.75	.....	.375	96.62	105.00	.....	.....	8	500	400	350	26.125	9	.....	200
24½	24.50	23.65	.....	.425	109.26	118.00	.....	.....	8	500	500	400	26.125	9	.....	300

*Sizes for California and similar territory, these are standard at present. Dimensions and weights copied from lists now in use and "size" changed to O.D. †To ascertain setting depth with safety factor of 2 with liquids heavier than fresh water divide the tabular number of feet by specific gravity of heavier liquid, or multiply by 8⅓ and divide product by weight per gallon of heavier liquid. To ascertain setting depth for any other factor than 2, multiply the tabular number of feet by 2 and divide the product by the desired factor.

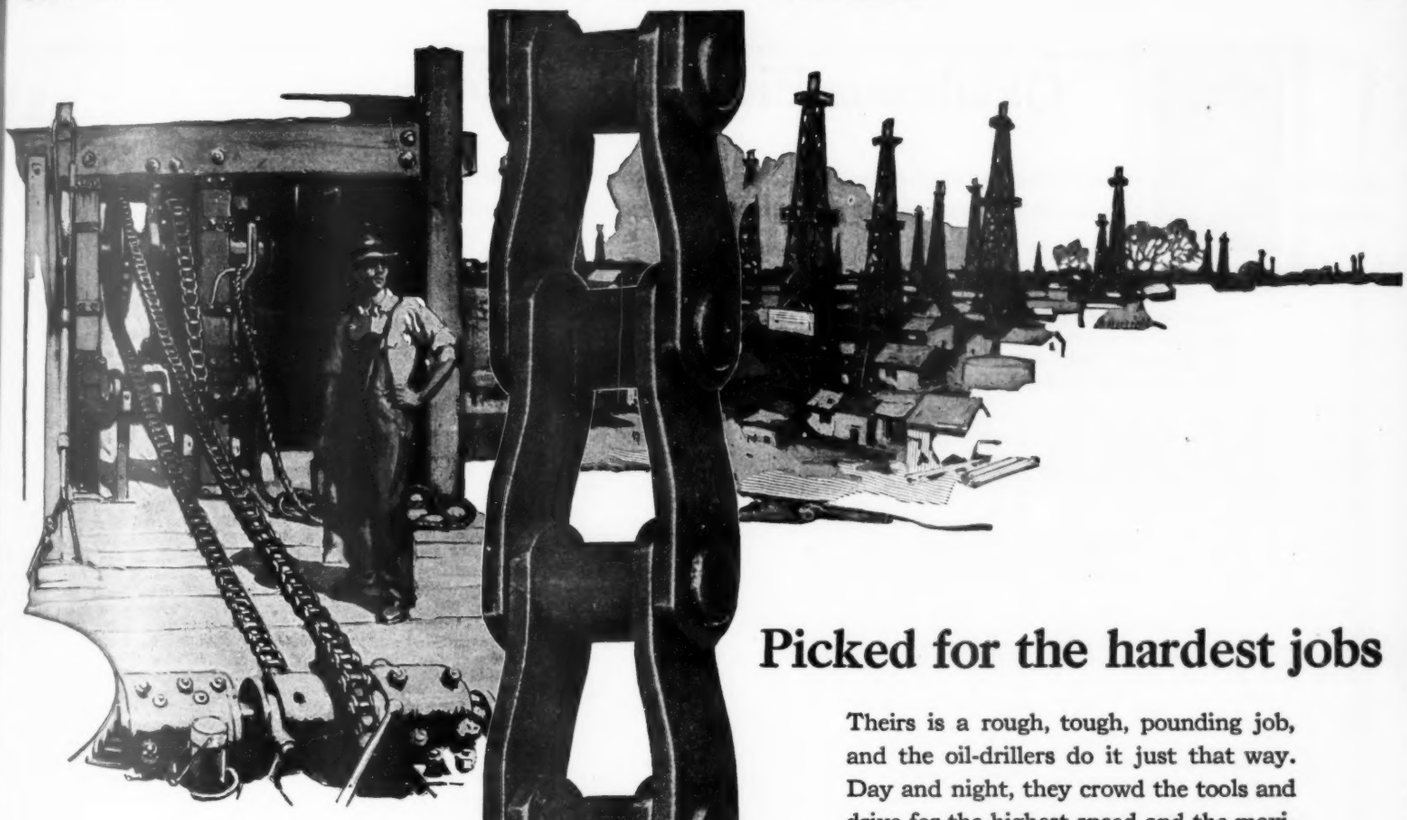
Upset ends of the 5⅝-in. and 8⅛-in. on this list are 1/16-in. and the couplings 1/32-in. larger in diameter than indicated on G-2 list.

Taper of threads on 10-thread pipe ⅝-in. diameter per foot of length. Taper of threads on 8-thread pipe ¾-in. diameter per foot of length. Assuming 30 per cent greater strength to resist collapse for high carbon seamless steel:

4¾-in. 16 lb. casing would set 7,000 ft. with the factor of safety of 2
5⅝-in. 23-lb. casing would set 7,000 ft. with a factor of safety of 1.85
6⅝-in. 28 lb. casing would set 6,100 ft. with the factor of safety of 2
8⅛-in. 40 lb. casing would set 6,000 ft. with a factor of safety of 1.82

When joints are screwed tight the ends of casing shall be ⅝-in. from center of coupling and, when in this position, the outside diameter of thread at end of coupling to be that of the nominal outside diameter of casing. Beyond end of coupling there shall be 3 threads perfect at the bottom on 8-thread and 3½ threads on 10-thread casing.

Extreme depth of recess in couplings not to exceed ⅝-in.



The long, reliable service it gives has made Rex Chabelco the standard heavy-duty sprocket chain not only in oil-well drilling, but on construction machinery, and in cement mills, saw mills, automobile plants and many other industries

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Theirs is a rough, tough, pounding job, and the oil-drillers do it just that way. Day and night, they crowd the tools and drive for the highest speed and the maximum power there is in the drilling rig.

They have no time to coddle things that cannot stand the gaff.

That is why Rex Chabelco Chain today is the standard drive chain in every important oil field. The rugged strength of its all-steel construction insures an unfaltering flow of power. Its long, long life is the best insurance of low-cost operation.

The chain that the oil men thus depend on is the chain for your heavy-duty drives and conveyors. It will keep down your upkeep costs and reduce your chain replacements. The name "Rex Chabelco" is stamped on the sidebars.

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Oklahoma Field Operations

By Ralph T. Baker

Operations held up by floods and bad roads. Burbank and Tonkawa production continues to decline. Three new wells on the Kay County extension of the Burbank Field. Tonkawa wells helped by shooting. Good showing in well in Section 33-8-8 adds to Wewoka's importance.

TULSA, Okla., Oct. 22.—The outstanding news feature in the Oklahoma Field in the past week was the purchase by the Dixie Oil Co. (Standard of Indiana) of the Smith, Buchner and others' interests in Township 8-8, the new Wewoka Field in Seminole County, opened by Smith and his associates. This purchase by the Dixie Oil Co., the details of which are given elsewhere, involves 1,080 acres of leases and a present day production of approximately 8,000 bbls. Smith and his associates have recently organized a company which is known as the Oklahoma Co., and this company owns about 3,000 acres in Township 7-7, which it will develop. The purchase price of the production and leases acquired by the Dixie Oil Co. is said to have been $3,000,000 cash. The Dixie company already had some acreage in the close neighborhood of the property it just bought and is prepared to carry on a development campaign with no more delay than the present unsettled conditions in the trade will warrant.

The Wewoka Field and its environs were covered with flood waters the past week. The back water from both the Big Canadian and the Little Canadian rivers, between which much of it lies, has made it very difficult to go over the territory and the carrying away of bridges has made traveling doubly dangerous. As a result the oil business was almost at a standstill and little news came out of the district in the week in review. The most important development there was the showing in the Lewis & Clark's test, NW cor. SW NE SW, Section 33-8-8, which got the pay sand at 3,123 feet and drilled 5 feet, the well showing 4,000,000 feet of gas and a spray of oil that amounted to 10 bbls. an hour, at the total depth named.

Three New Wells in Burbank

Three wells in the Kay County extension of the Burbank Field which have been shut down for some time, were drilled in this week. The Cosden Oil & Gas Co.'s No. 1, NW cor. Section 10-27-5, got the top of the sand at 2,876 feet, first oil at 2,897 feet and was drilled to a total depth of 2,913½ feet, and is flowing naturally 60 bbls. an hour. The Texas Co.'s No. 1, SW cor. Section 3-27-5, found the top of the sand at 2,878 feet and drilled in 1 foot. The well was making from two to four million feet of gas at that depth. It was shut down. The Phillips Petroleum Co.'s No. 1, NE cor. Section 9-27-5, was good for 525 bbls. a day naturally from sand at 2,903 feet, drilled in 20 feet. These wells were all offsets and the Gypsy Oil Co. is below 2,100 feet in another offset, SE cor. Section 4. The recent drop in Burbank Field production was taken by the companies as warrant enough for drilling these wells in after their long shut down. On the Osage County side of the field the Skelly Oil Co.'s No. 11, SE cor. NE SE SW, Section 23-27-5, was abandoned as dry at 3,053 feet. There is very little drilling in the Burbank Field.

Burbank production fell off in the past week at the average rate of 3,025 bbls. a day. A total of 1,101 wells were producing 90,005 bbls. a day. Of this amount the Burbank side of the field made 62,073 bbls. from 1,050 wells, an average of 86 bbls. per day while the newer Kay County side made 27,927 bbls. a day from 51 wells, an average of 547 bbls. per day. The completions mentioned above are not included in the report.

Burbank Production by Companies

Company—	Wells	Bbls.
Carter Oil Co.	164	9,764
Comar Oil Co.	7	288
Cosden Oil & Gas Co.	68	1,982
Devonian Oil Co.	16	378
Gardner Petroleum Co.	20	1,018
Gypsy Oil Co.	165	15,457
Kewanee Oil & Gas Co.	12	240
Laurel Oil & Gas Co.	16	580
Lorraine Petroleum Co.	14	391
Midland Oil Co.	5	151
Mid Kansas Oil & Gas Co.	20	4,242
Phillips Co. & Delmar Oil Co.	2	1,850
Phillips Petroleum Co.	12	2,042
Phillips Pet. Co. & Skelly Oil Co.	141	6,805
Prairie Oil & Gas Co.	90	2,546
Peters & Olyphant	1	125
Producers & Refiners Corp.	28	916
Roxana Petroleum Corp.	57	1,109
Simons, Moore and others	29	674
Sinclair Oil & Gas Co.	130	6,304
Skelly Oil Co.	4	1,834
Tidal-Osage Oil Co.	41	1,253
Twin State Oil Co.	8	329
Total	1,050	62,078
Kay County		
George S. Boles	1	900
Carter Oil Co.	3	3,363
Comar Oil Co.	6	3,478
Cosden Oil & Gas Co.	2	2,142
Gypsy Oil Co.	4	1,112
Laurel Oil & Gas Co.	1	24
Phillips Petroleum Co.	5	6,264
Danciger and others	5	1,150
Skelly Oil Co. & Phillips Pet. Co.	12	2,179
Mid Kansas Oil & Gas Co.	4	3,258
Pure Oil Co.	1	690
Roxana Petroleum Corp.	1	785
Sinclair Oil & Gas Co.	1	176
Twin State Oil Co.	5	2,406
Total	51	27,927
Total Burbank	1,101	90,005
Total last week	1,099	93,030
Difference	2	3,025

Daily average pipe line runs were as follows: Gulf Pipe Line, 4,414 bbls.; Cosden Pipe Line, 3,911 bbls.; Kay County Gas Co., 6,623 bbls.; Osage Pipe Line, 1,245 bbls.; Oklahoma Pipe Line, 15,428 bbls.; Prairie Pipe Line Co., 6,078 bbls.; Sinclair Pipe Line Co., 2,998 bbls.; Moore Refining Co., 2,350 bbls.; Empire Pipe Line Co., 1,316 bbls.; Magnolia Petroleum Co., none; Ozark Pipe Line Co., 3,853 bbls. Total, 48,216 bbls.

The daily average of oil run to storage during the week was as follows: Standish Pipe Line Co., 11,521 bbls.; Gypsy Oil Co., 13,243 bbls.; Sinclair Oil & Gas Co., 4,398 bbls.; Mid Kansas Oil & Gas Co., 6,104 bbls.; Danciger and others, 750 bbls.; Twin State Oil Co., 1,131 bbls.; George Boles, 650 bbls.; Delmar Oil Co., 1,850 bbls.; Cosden Oil & Gas Co., 2,142 bbls. Total, 41,789 bbls.

North of Tulsa

In the Bird Creek district, Osage County, Munn Bros. are drilling deeper in No. 3, CWL NE, Section 28-20-12, a short distance northwest of Tulsa and had reached a depth of 2,030 feet. The Riverland Co.'s No. 1, SE cor. NE NW, Section 28-20-12, got the second break in the lime from 2,053 to 2,057 feet and the well flowed by heads 22½ bbls. an hour of 38.5 gravity crude. Buck Harter finished a failure at 2,100 feet in No. 1-A Howarth, SE cor. SW SE, Section 12-20-12, on the Tulsa County side. The Oklahoma Producing & Refining Corp.'s No. 16 Chisholm, NE cor. NW SE SE, Section 13-21-12, Tulsa County, was good for 10 bbls. after an 80-quart shot at 1,150-83 feet. C. Deem's No. 1-A Ellis, SE SE cor. Section 6-21-13, Tulsa County, was abandoned as dry at 1,798 feet. H. Hayden's No. 8 Baker, NW cor. SE, Section 9-21-13, was shut in as a 2,000,000-foot gasser, from sand at 1,748-50 feet. The same operator has spudded in No. 2 Murray, SW cor. NW, Section 9-21-13. The Midco Petroleum Co. is drilling deeper in an old well, 16 Tiblow, C NW NW, Section 9-21-13, and was below 1,400 feet. The United States Oil Co.'s No. 1 Charley, SE cor. SW SW, Section 9-21-13, was fishing for a bit at 1,587 feet. Flannagan and others were drilling in the top of the lime at 1,690 feet in No. 1 Tiblow, NW cor. SE, Section 10-21-13. The Creo Oil Co.'s No. 9-A Tucker, SW cor. NW NE, Section 12-21-12, got sand at 1,183-1,220 feet and made a 10-bbl. well after a 100-quart shot.

West of Tulsa the Sand Springs Home was reaming 5-inch casing at from 1,540 to 1,984 feet in No. 1 Emarthla, C SE NE, Section 12-19-11, and was drilling below 1,350 feet in No. 2 Bruner, CEL SE SW, Section 6-19-12.

In the Olive district, Creek County, C. P. Davis has a rig up for No. 3 Big Mosquito, NW cor. SE, Section 19-17-9. The Pure Oil Co. has commenced drilling No. 1 Wright, SE cor. NW, Section 19-17-9.

The Carter Oil Co. was drilling below 3,100 feet in an old well drilling deeper, No. 2 McDermott, NW cor. SE SW, Section 16-16-9.

In the Mounds district, Okmulgee County, the Sheridan Oil Co.'s No. 2 Willis, CSL SW SW, Section 22-16-12, which started at 350 bbls. after a 20-quart shot at 2,500-11 feet, is now producing 40 bbls. a day.

In the Eastern Bristow district, where very little activity is going on, the Independent Oil & Gas Co. is drilling below 400 feet. Waite Phillips No. 2 McIntosh, SE cor. SW NE, Section 29-15-10, got sand at 3,279-90 feet which was shot with 30 quarts, the well responding with a 70-bbl. production.

Tonkawa Production Down

Production in Tonkawa dropped 5,062 bbls. a day last week. A total of 564 wells were producing 52,828 bbls. a day as against 57,890 bbl. a day from the same number of wells the week before. A number of wells that had been producing naturally were shot and their production increased, but this increased production does not figure in the current production report, which is as follows:

Tonkawa Production by Companies

Company—	Wells	Bbls.
Amerada Petroleum Corp.	35	3,032
Blackwell Oil & Gas Co.	28	3,146
Carter Oil Co.	6	369
Champlin Refining Co.	2	192
Champlin Refining & Twin States Oil Co.	1	18
Comar Oil Co.	249	20,252
Cosden Oil & Gas Co. & Marland Refining Co.	13	261
Gypsy Oil Co.	77	8,487
Healdton Oil & Gas Co.	14	1,983
McCaskey & Wentz	42	6,033
McMan Oil Co.	2	75
Pennok Oil Co.	25	2,379
Phillips Petroleum Co.	4	437
Prairie Oil & Gas Co.	10	1,114
Sinclair Oil & Gas Co.	1	15
Slick-Comar Oil Co.	31	3,029
Southwestern Petroleum Co.	14	975
The Texas Co.	4	95
White Eagle Oil & Rfg. Co.	6	626
Total	564	52,828
Total last week	562	57,890
Difference	2	5,062

Daily average pipe line runs from the field for the week were: Kay County Gas Co., 35,087 bbls.; Ozark Pipe Line Co., 9,963 bbls.; Gulf Pipe Line Co., 1,699 bbls.; Empire Pipe Line Co., 1,530 bbls.; Champlin Refining Co., 1,671 bbls.; Prairie Pipe Line Co., 1,114 bbls.; Producers & Refiners Corp., 431 bbls.; The Texas Co., 95 bbls.; Oklahoma Pipe Line Co., 369 bbls.; Bolene Refining Co., 539 bbls.; Golden Refining Co., 311 bbls. Total 52,828 bbls.

Shooting Old Tonkawa Wells

In the Tonkawa Field, McCaskey & Wentz' No. 1-A McKee, SE cor. SW, Section 34-25-1w, which made 227 bbls. a day naturally from sand at 2,498 to 2,586 feet, was shot with 50 quarts from 2,555 to 2,586 feet, and the production increased to 443 bbls. The same company's No. 18 McKee, NE cor. SE NE SW, Section 34-25-1w, was shot with 60 quarts at 2,467 to 2,526 feet, and its production brought up to 346 bbls. the ensuing 24 hours. No. 19 McKee, NW cor. SW, Section 34-25-1w, which did 130 bbls. naturally from sand at 2,521 to 2,582 feet, was given a 20-quart shot and made 169 bbls. the next 24 hours. No. 40 McKee, NW cor. NE NW SW, Section 34-25-1w, which had started off naturally at 149 bbls. a day from sand at 2,497 to 2,568 feet, made 806 bbls. the first 24 hours after a 20-quart shot. All the above were old wells. The Pennok Oil Co. shot its No. 9 Endicott, CSL SE, Section 34-25-1w, at 2,515-46 feet and it is now making 65 bbls. a day.

The Prairie Oil & Gas Co.'s No. 6-B Novotny, NE cor. SE, Section 10-24-1w, is estimated to be a 30-bbl. pumper from sand at 2,645-69 feet.

The Magnolia Petroleum Co. has a rig up for a test on the Glover farm, C NW NE SW, Section 35-5n-8w, Grady County.

Ray and others' No. 2 Carter, SE cor. SW NE NE, Section 28-3n-5w, Kilgore district, Grady, County, has increased its production to 15,500,000 feet a day from sand at 1,391-1,412. There is a 520-lb. rock pressure.

In the Duncan Field

The Ellis Drilling Co. has spudded in No. 1 Denton, NE cor. SE SW, Section 23-1n-9w, Stephens County. The Safety First Oil Co. was drilling at 400 feet in No. 6 Rockwood, NW cor. NE SW, Section 20-1s-8w. The Magnolia Petroleum Co.'s No. 5 Edwards, SW cor. SE NW, Section 20-1s-8w, is a 10,000,000-foot gasser at 2,276-84 feet.

The same company's No. 1 Bentley, SE cor. NW SW NW, Section 20-1s-8w, was abandoned as dry at 2,757 feet. The Tee Pee Oil Co.'s No. 2 Marks, NE cor. SW NE SE, Section 13-2s-8w, is now making 15 bbls. a day after being plugged back to 1,900 feet and cleaned out.

In Jefferson County, Hutton Bros. are drilling below 200 feet in No. 1-A Kaniatobe, C NW NE SW, Section 5-5s-7w.

Cook & George's No. 1 Hawkins, CWL NW NW, Section 5-15-15, Okmulgee County, started at 20 bbls. after a shot at 1,295-1,310 feet. In the Bald Hill district, Archer Bros. & Carpenter have a rig up for a test on the Perryman farm, NE cor. NW SW, Section 32-14-14. In the Tiger Flats district O. F. Dickerson is rigged up on No. 1 Richardson, SW cor. NW SW, Section 28-13-11.

Important Far Western Tests

The attention of the producing end of the industry in Oklahoma is called to developments started quite recently in Roger Mills County, one of the western border counties of the State, where the Mutual Oil Co. is drilling a test in Section 1-16n-21w, and the Roxana Petroleum Corp. is drilling another in Section 9-16-21w and Kellogg and others have a rig up in Section 10-16-21w. These tests are located west of the town of Leedy, in Dewey County, which is on the line of the Wichita Falls & Northern railroad.

The Leedy structure has been checked up by a number of well known geologists, and while there is some minor variation in their conclusions they all appear to think it is worth developing. Evidently

(Continued on Page 108)

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California Field Operations

By L. P. Stockman

Shell Co.'s No. 8 Golay, Santa Fe Springs, completed with 4,150 bbls.; Associated Oil Co.'s No. 1 Fulton, 4,050; Amalgamated's No. 4 Dallugge, 3,500 bbls. Petroleum Midway's No. 4 Harlow, Long Beach, makes 4,000 bbls.; W. R. Ramsey's No. 1 Coffin, 3,000.

LOS ANGELES, Calif., Oct. 20.—During the month of September, according to figures collected by the American Petroleum Institute, production of crude in California averaged 858,750 bbls. a day and established a new record, which, it is not believed, will be exceeded during the present period of heavy production. This is the highest daily average production of crude ever recorded and, due to the rapid decline in the output at Santa Fe Springs, the daily output during the month of October will, undoubtedly, be very materially less than the average for September. The daily output at Santa Fe Springs during September was 7,860 bbls. a day less than the average during the preceding month, while Huntington Beach showed a loss of 14,954 bbls. daily. Long Beach, on the other hand, showed an increase of 26,000 bbls. daily over the daily average production during the month of August. The following table, which shows the daily production of the three principal fields in Southern California for the current year to date, gives some idea of the large increase recorded each month during their climb and the rapid decrease after reaching the peak:

Month—	Long Beach	Santa Fe Springs	Huntington Beach
January	120,341	91,122	80,387
February	131,371	110,060	107,205
March	138,778	152,241	110,122
April	143,095	203,988	113,228
May	164,723	220,270	98,489
June	139,140	252,629	97,612
July	198,041	297,830	110,228
August	214,818	322,522	104,582
September ...	240,918	314,662	89,628
*October	245,000	290,000	85,000

*Estimated.

The most interesting part of the Institute's monthly report is the increase in stocks, which amounted to only 2,372,774 bbls. This is only about half of the increase which was expected during the month, inasmuch as a new production record was established and shipments fell off considerably. Heavy crude and residuum decreased 1,283,838 bbls., while refining crude and tops increased 2,555,061 bbls., and 1,101,551 bbls. respectively.

Santa Fe Springs

In contrast to recent completions at Santa Fe Springs the initial production of new wells during the past week seems to be quite large, several good producers being brought in. The largest well put on production was No. 8 Golay, brought in by the Shell Oil Co., doing 4,150 bbls. daily from 4,675 feet. This well was completed with a 4¾-inch oil string landed at 4,663 feet and the oil, which is clean and tests 34.2 degrees, is flowing through a 1½-inch bean under a pressure of 300 pounds. This latest completion brings the Shell's production at Santa Fe Springs to slightly in excess of 15,000 bbls daily. Although the Associated Oil Co. completed a slightly smaller well than the Shell's No. 8 Golay, it was due to the fact that the former's No. 1 Fulton is flowing through a smaller bean. Number 1 Fulton struck the pay at 4,611 feet and registered an initial output of 4,050 bbls. of 33.5 gravity oil with a cut of 2 per cent. It is flowing through a 1-inch bean under a pressure of 400 pounds and a check on its production two days after completion showed very little variation from the first days production. The Amalgamated Oil Co., a subsidiary of the Associated, also added a new well to its list of producers during the week, its No. 4 Dallugge showing an initial output of 3,500 bbls. a day upon completion. This well was slightly deeper than No. 1 Fulton, the depth being 4,722 feet, although both wells are producing from the Meyer zone. The output from No. 4 Dallugge tests 34.9 degrees and the pressure on the casing is 300 pounds.

The General Petroleum's weekly completion was No. 52-B Santa Fe, which was completed at 4,750 feet. It is a little difficult to decide whether to complete this well as an oil well or a gasser. The initial completion showed 500 bbls. of oil a day and 10,000,000 feet of gas. Two days later the well was making 750 bbls. of oil and 15,000,000 feet of gas daily. This is a fairly good well inasmuch as the gas is wet and the oil is of a high gravity, 33.2 degrees, with a comparatively small cut, 2 per cent, considering the circumstances of completion. The General Petroleum Co. has about 20 other wells drilling, and, if several deep fishing jobs among them are successfully completed, the company should bring in 4 or 5 wells during the next 3 or 4 weeks.

Declined Rapidly

The Standard Oil Co. brought in a good well in No. 5 Weisel, which was completed at 4,650 feet but the initial production, which was fairly large, declined quite rapidly. Number 5 Weisel was put on production early in the week and registered an initial output of 3,000 bbls., but two days later the production had dropped to slightly in excess of 2,000 bbls. daily. This well was completed with a 4½-inch oil string set at 4,645 feet and the oil, which tests 34.4 degrees, and shows a cut of 3 per cent is flowing under a pressure of 450 pounds.

The Union Oil Co. brought in No. 8 Alexander from 4,356 feet and, while the oil is clean and the well shows a good pressure, 400 pounds, the initial output was comparatively small, the first 24 hours' production being slightly less than 1,000 bbls. The oil from this well, flowing through a 1-inch bean, was the highest in gravity of any of the completions recorded during the week, a test showing the oil to be 35.1 degrees in gravity. The Union has 19 wells drilling, several of which are held up with fishing jobs, but, notwithstanding this handicap, the company should show several early completions. The Union's next new well will probably be No. 4 Alexander, which has been completed at 4,700 feet after being deepened from the Bell to the Meyer sand at this depth. Number 11 Meyer, being swabbed at 4,606 feet, should also be an early completion and, while the former will undoubtedly be much the larger, the oil from the latter will probably be of a higher gravity.

There was only one recompletion during the week, the Jameson Oil Co.'s No. 2 Compton being recompleted after being redrilled and deepened from the Bell to the Meyer zone at 4,581 feet. This well, flowing through a 1⅛-inch bean, started off making 875 bbls. a day of 34.5 gravity oil with a cut of 1 per cent under a pressure of 100 pounds. A little more hole and this well would probably show twice its present output. Barring mechanical difficulties, the Elliott extension will probably bring in its first well, No. 1, completed at 4,585 feet, sometime next week, and indications point to a good producer. This will be Brick Elliott's second producer and most of his acquaintances are pulling for a large one. Hopkins & Howland completed No. 2 Baker at 4,682 feet, and, although it has been swabbed for several days, it does not have sufficient kick to begin flowing. It is not known at present whether a little more hole will be added or whether the well will be put on the pump.

Deeper Pumping

The Bell zone, at one time producing the largest part of the daily output at Santa Fe Springs, is fast ceasing to be a vital factor in the field's output and its production a year hence will probably be negligible. Out of a total daily production of 280,000 bbls., the Bell zone is only producing about 15,000 bbls., the balance coming from the deeper and more productive Meyer zone. This is due to the partial depletion of the Bell sands and the passing up entirely of this zone by operators in their mad rush for production.

The possibility of pumping wells from 4,500 to 5,000 feet in depth was the subject of no little discussion several months ago and, while many were of the opinion that it was impossible to pump deep wells they were probably not familiar with the fact that deep wells at that very time were being successfully pumped in several fields. The only question of interest in this connection is just how soon this deep pumping will be general. Smaller production derived from deep pumpers will undoubtedly result in better prices for crude and this condition, it is believed, will automatically take care of itself because of the fact that wells which do not pay to pump will, in a great many cases, remain idle until the price of crude reaches that point which makes commercial production profitable. The industry in general in California is not worrying over the possibility of pumping these deep wells but it rather looking forward to the arrival of this time, which will stabilize conditions and permits operators in all fields to resume operations again. There have been many predictions made regarding the life of wells in the three principal Southern California fields and although producing wells in the Huntington Beach, Long Beach and Santa Fe Springs fields have been drilled too close together, there being far more to the acre in these three districts than in most other fields, they will probably be capable of producing more oil per well for several years than the older but more favorably located wells of the San Joaquin Valley. Southern California producers are also favored with a better quality oil and will undoubtedly receive a better price for their production. For this reason all pessimistic reports, which limit well production in the over developed fields, should not be taken too seriously.

Long Beach

With but one exception, all of the wells completed at Long Beach during the past week were brought in from below the 4,000-foot level, several of them being below 5,000 feet. It is doubtful if the decline in this field will be as rapid as has been the decrease at Santa Fe Springs during the past few weeks. Joseph Jensen, chief geologist of the Amalgamated Oil Co., some time ago estimated the production of Santa Fe Springs during December at 252,000 bbls. and the output of Long Beach during the same period at 240,000 bbls. It can be seen that the anticipated decline of Santa Fe Springs is much the larger, but if the output of the field continues to drop during the next 60 days at the same rate at which it has during the past 30 days the daily production will be nearer 200,000 bbls. than 252,000 bbls. The daily output at Long Beach will probably be around 200,000 bbls. at the close of the year and, although carefully prepared estimates of future production do not coincide with the writer's opinion that the daily production at Long Beach during the last week of the current year will exceed that of Santa Fe Springs for the same period, there is a strong possibility that such will be the case.

To the Petroleum Midway Co. fell the honor of completing the largest well at

(Continued on Page 104)

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Following is a list of tankers, date departed, destination, kind of cargo and amount in barrels:

K. R. Kingsbury, October 8, New York crude	85,000
Agwistone, October 9, New York, crude	105,000
S. M. Spalding, October 9, New Orleans, crude	70,000
Franklin K. Lane, October 10, New Orleans, crude	76,000
Algonquin October 10, Providence, crude	70,000
Deroche, October 10, Baltimore, crude	70,000
W. C. Teagle, October 12, New York, crude	110,000
Delaware Sun, October 12, Philadelphia, crude	90,000
Robt. E. Hopkins, October 12, New York, crude	75,000
Aladdin, October 12, New York, crude	70 000
Wm. H. Doheny, October 13, New Orleans, crude	75,000
Coastwise	
Warwick, October 8, Portland, refined	40,000
R. J. Hanna, October 8, Richmond, crude	80,000
Frank H. Buck, October 8, Avon, crude	65,000
Tejon October 9, Martinez, crude	70,000
J. A. Moffett, October 9, Portland, fuel	60,000
Montebello, October 9, Oleum, crude	75,000
S. C. T. Dodd, October 9, Richmond, crude	65,000
Hulaco, October 9, Avon, crude	70,000
Cathwood, October 10, Martinez, crude	80 000
Lubrico, October 10, Richmond, crude	80,000
Alden Anderson, October 10, Avon, crude	70,000
W. S. Miller, October 11, Richmond, crude	75,000
H. T. Harper, October 11, Portland, refined	30,000
R. J. Hanna October 11, Richmond, crude	75,000
Utacarbon, October 11, Martinez, crude	75,000
Paul Shoup, October 12, Avon, crude	76 000
La Purisima, October 12, San Diego, refined	20,000
Coalinga, October 13, Oleum, crude	75,000
S. C. T. Dodd, October 13, Richmond, crude	70,000
Los Alamos, October 13, Portland, refined	40,000
La Brea, October 14, Seattle, refined	50,000
Hulaco, October 14, Avon, crude	75,000
Lubrico, October 14, Richmond, crude	80,000
Cathwood, October 14, Martinez, crude	75,000
From San Francisco	
Eurana, October 8, Boston, tops	70,000
Lebec, October 8, Astoria, fuel	70,000
Frank H. Buck, October 12, Linnton, fuel	60,000
Atlas, October 12, Aberdeen, refined	12,000
W. S. Porter, October 12, Seattle, fuel	50,000
Kewanee, October 13, Portland, refined	20,000
Tejon, October 13, Seattle, fuel	50,000
Capt. A. F. Lucas, October 14, Seattle, refined	25,000

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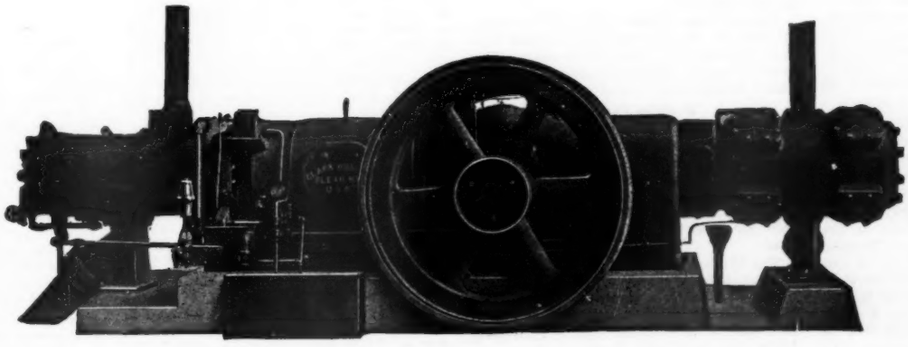
—*Kipling*



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North-Central Texas Field

By Dan F. Dugan

Bridwell & Heydrick's No. 5 Mrs. Carter, Archer County, makes 315 bbls.; Barclay & Meadows' No 1 Wilson, near completion, showing for 200 bbls. Bohler & Huff's No. 1 Wilmot swabs 200 bbls. Wilmot Field extended by Barnes & Bishop's No. 1 Wilson, swabbing 125 bbls. first 12 hours.

FORT WORTH, Tex., Oct. 22.—Production runs for the North Central Texas Field, during the week in review made a daily average of 114,710 bbls., showing a loss in spite of a new schedule of prices, and an order accepting all oil from some leases, both flush and settled production. A loss of 1,534 bbls. daily is reported from the entire district, with the Electra Pool making the largest decrease, 1,934 bbls., and the wildcat pools a close second, which decreased their previous week's flow 1,380 bbls. daily, while Burkburnett and Eastland County decreased 395 bbls.

Substantial gains were made in Stephens County, 1,195 bbls., and Iowa Park, 860 bbls.

Wichita County reports several new locations the past week, showing a partial return to normal conditions. The new locations are all offsets, but with only a 50 per cent market for the oil there was a time only a few weeks past when not even offsets were drilled.

Archer Production Rises

Archer County is the only section showing new production and just as its new pools which have been responsible for increasing the production from the county from a few hundred to 18,000 bbls. daily, show signs of being defined another jump is made in production by the completion of a large initial producer several miles from settled production.

The past week's sensation is the Barclay & Meadows No. 1 Wilson, a near-completion at 1,535 feet, 3 miles from present production and southeast of the Sunshine State Oil & Refining Co.'s pool. It is being tested; has 600 feet of oil in the hole and shows every indication of making better than 200 bbls. a day.

The Electra Pool accounts for its slump in production to the few completions and the decrease in production of the older wells.

The deep lime producing pools in Eastland and Stephens Counties offered nothing of a sensational, or even an interesting nature for the week, the largest producer reported was the Landreth Oil Co.'s No. 1 Moore which showed 150 bbls. from the black lime around 3,580 feet.

The Corbett and others' No. 1 Williams, a shallow well at 2,220 feet is showing for around 100 bbls. a day. In Eastland County there was only one semi-completion of any importance, the Gordon Petroleum Co.'s No. 1 Amis, 2 miles west of Eastland. It is making from 15,000,000 to 20,000,000 feet of gas daily and a little oil. The pay was struck at about 3,200 feet, which is the usual depth for the lake district. It is being drilled deeper, although this is slow work on account of the heavy gas pressure. The Amis tract is just across the road from the Kinnebrew tract, owned by the Gulf Production Co.

While but few new leases are being made in Eastland and Stephens Counties the expiring leases are nearly all being renewed. There were a great many leases that expired in 1922 and so far in 1923, at the end of the five-year period, and much of this land was leased again. Renewal rentals on these leases are being promptly paid and every big operating company in the county has a large amount of acreage under lease.

The week's field report carries a number of producing completions and some interesting information relative to semi-completions in this county. The two completions showing the largest initial production are the Bridwell & Heydrick's No. 5 Mrs. Carter, 315 bbls., at 1,585 feet and the same company's No. 2 Carter Bros., 312 bbls. at 1,580 feet.

Semicompletions of interest are Bohler & Huff's No. 1 Wilmot which swabbed 200 bbls. in 24 hours at 1,585 feet. Bell and others' No. 1 Wilson, 110 bbls. in 12 hours at 1,595 feet.

A new territory embracing over half a mile in length was added to the proven area of the Wilmot Field by the semi-completion of the No. 1 Wilson by Barnes & Bishop. The top of the pay was encountered at 1,599 feet and was drilled three feet, when the oil raised to the top of the casing. It was put on the swab and made 125 bbls. the first 12 hours.

To the north and east of the Chenault-Lea producers on the Wilson ranch the No. 2 of the 66 Oil Co. is swabbing and flowing by heads with a daily output of 200 bbls. from the 1,580-foot sand. The same company's No. 1, which was completed a short time ago two locations to the north, was a 50-bbl. pumper.

South of the wildcat sensational producer of Barkley-Meadows, a distance of 1½ miles, Larkin & White have blocked up 900 acres, on the Wilson and Miller ranches, and are planning to start a test in 15 to 30 days.

Steward and others will drill a wildcat test on the Helms ranch, about 2½ and 1½ miles northeast of Dundee. The derrick is up and drilling only awaits water connection.

Wichita County

This section of the field made some increase in field development the past week. The principal features were the showing of a wildcat test 6 miles south of Iowa Park, the showing of two semi-completions in the Clara district and a noticeable increase in drilling in the Electra Pool.

The Clara district has apparently added two producers though neither of these tests is listed as a completion yet. The McNabb company's No. 2 Potter, 1,826 feet, and J. J. Perkins' No. 1 Saunders, 1,838 feet, are both showing oil enough to cause them to be figured as producers. The McNabb well is a location east of the L. P. Hammond producer, which was sold to John O'Neil; the Perkins well offsets the Hammond to the southward. McNabb's No. 1 is due to reach the sand early next week.

South of Iowa Park about 6 miles, in a section that has been drilled at frequent intervals for 15 years, without much success, Steadham & Thrasher are preparing to test a sand at 1,800 feet in No. 2 Daume. The Iowa Park section is experiencing considerable activity; southwest of the town, Knight & Hines are drilling at 1,700 feet No. 1 Fasset in what is described as a promising formation.

Two near completions were reported by the Magnolia Petroleum Co. on its leases in the shallow fields south and west of the Burkburnett Pool. No. 90 picked up the sand at 525 feet and is on the pump, making 25 bbls. No. 99 on the same tract is good for 10 bbls. in the 1,600-foot pay.

The Electra Pool, the county's most active district, the fountain head of its large daily production, is practically at a drilling standstill. Where, previous to the slump, hundreds of tests were drilling and new derricks building daily, now there are only a few engaged in drilling operations and these are on the older leases, and nearly all of them are offsets.

Burkburnett-Hirschi

Completions reported in the Burkburnett and Hirschi districts are the Cooper and others' No. 1 Hearne, dry at 2,000 feet; Bonner and others' No. 3 Beach, 4 bbls. at 1,190 feet.

Drilling: Baldwin Brothers' No. 12-C Kennedy, drilling at 605 feet; Gulf Production Co.'s No. 13 Dale, is a rotary rig, as is Howell and others' No. 1 Van Horn; Kemp and others' No. 5 Eads, drilling at 405 feet; Langford and others' No. 7 Langford, running tubing at 1,850 feet; No. 8 Langford, drilling in brown shale at 520 feet; Lewis and others' No. 2 George, drilling at 2,515 feet in blue shale; Morgan and others' No. 1 Chapman, moving in a rotary machine; McNabb and others' No. 2 Saunders, set and cemented 6⅝-inch casing on top of a sand showing oil at 812 feet; Magnolia Petroleum Co.'s No. 98 Reilly, drilling at 1,805 feet; No. 20 Holtzen, drilling with standard tools at 325 feet; No. 7 Holtzen, drilling at 270 feet; John O'Neill's No. 1 Saunders, pumping with no gauge at 1,830 feet; No. 2 Saunders, drilling at 1,305 feet; Sun Oil Co.'s No. 22 Hirschi, drilling in an oil sand at 1,865 feet; No. 23 Hirschi, drilling at 1,605 feet; Robinson Oil Co.'s No. 6 Roller, coring a sand showing some oil at 1,156 feet.

Wichita-Electra

Completions: Mansfield and others' No. 2 Jennings, dry at 892 feet; Apperson and others' No. 1 Ancell, dry at 1,000 feet; John O'Neil's No. 11 Waggoner, dry at 1,517 feet; Peterson and others' No. 1 Creighton, dry at 1,935 feet; Ryan Petroleum Co.'s No. 11 Nance, 83 bbls. at 1,220 feet; Electra Gulf Oil Co.'s No. 1 King, dry at 2,410 feet; Pigg and others' No. 1 Forrester, dry at 2,200 feet; Mike Sullivan's No. 1 Waggoner, dry at 2,105 feet; Wirt Franklin's No. 1 Womack, dry at 2,200 feet.

Drilling: Robinson and others' No. 1 McCaleb, underreaming for 6⅝-inch casing at 1,940 feet; Hobbs Bros.' No. 17 Yarborough, drilling in blue shale at 1,370 feet; Knight and others' No. 1 Potts, a rotary rig. Noble Oil Co.'s No. 1 Waggoner, drilling at 855 feet; South Vernon Oil Co.'s No. 1 Stephens, at 1,300 feet; The Texas Co.'s No. 285 Waggoner, at 140 feet; Holcomb and others' No. 1 Zeiset, drilling in brown shale at 1,515 feet; Magnolia Petroleum Co.'s No. 1 Tuttle, drilling without any showing at 2,180 feet; No. 6 Douglas, drilling at 655 feet; Texhoma Oil & Refining Co.'s No. 1-J Waggoner, rigging up a rotary machine; Bridwell and others' No. 1 Edgerly, drilling at 1,210 feet; Fisher and others' No. 3-B Fisher, at 75 feet; Herford Oil Co.'s No. 11 Allingham, at 175 feet.

Jennings and others' No. 1 Jennings, drilling with a machine at 650 feet; Magnoila Petroleum Co.'s No. 26 Waggoner, set and cemented 8¼-inch casing at 1,402 feet; No. 5-B Waggoner, drilling at 720 feet; Noel and others' No. 1 Waggoner, have the tools in the hole and shut down for 5⅞-inch casing at 1,950 feet; Texhoma Oil &Refining Co.'s No. 3-A Burnett, drilling at 1,485 feet; No. 10-F Waggoner, at 325 feet; Nos. 11-F and 27-A Waggoner, rotary rigs. No. 2-B Burnett, drilling in brown shale at 840 feet; Duncan and others' No. 2 Rhoden, drilling at 965 feet; Kentucky Oil Corp.'s No. 1 Davis, at 155 feet; Lucky Hill Oil Co.'s No. 1 Lautenslager, drilling without any showing in blue shale at 1,625 feet; Temple and others' No. 1-B Parker, drilling at 1,745 feet.

Archer County

Completions: Bower and others' No. 2 Ferguson, dry at 1,802 feet; Bridwell & Heydrick's No. 5 Mrs. Carter, 315 bbls. at 1,580 feet; same company's No. 2 Carter Bros., 312 bbls. at 1,585 feet. Clayton and others' No. 2-B Richardson, 70 bbls. at 1,365 feet; Staley and others' No. 1-B Wilson, 175 bbls. at 1,590 feet; Sunshine State Oil & Refining Co.'s No. 9 Carter Bros., 175 bbls. at 1,585 feet; Trammel Oil Co.'s No. 1 Andrews, dry at 1,505 feet; Dr. Wallace's No. 8 K. & K., 65 bbls. at 1,750 feet.

Drilling: Boyd and others' No. 1 Mrs. Carter is a rotary rig. Burns and others' No. 1 Parrish, standardizing on top of an oil sand at 1,582 feet; Carter and others' No. 2 Ferguson, rigging to pump and test an oil sand at 1,765 feet; Chennault and others' No. 3-C Wilson, will test a sand showing some oil at 1,585 feet; No. 3-B Wilson, drilling in an oil sand at 1,585 feet; No. 4-D Wilson, drilling at 155 feet; Collender and others' No. 1 Hawkins, at 155 feet; Cranfill and others 'No. 1 Wilson, at 155 feet; Dale and others' No. 4 Wilmot, drilling in rock at 1,285 feet; Dickson and others' No. 1 White, drilling at 665 feet; Empire Gas & Fuel Co.'s No. 1 Wilson, at 1,616 feet set and cemented 6⅝-inch casing; Featherstone and others' No. 2-B Wilson, drilling at 1,465 feet; No. 1-C Wilson, drilling in blue shale at 1,235 feet; Grandberry drilling Co.'s No. 1 Wilson, drilling in a sand showing oil, looks like it will make a producing well, at 1,600 feet; Gwynn and others' No. 2 Carter, pumped 55 bbls. of oil and 15 bbls. of water in 24 hours and not yet completed at 1,570 feet; Hawkins and others' No. 2 Carter Bros., bailing and testing oil sand at 1,585 feet.

Jetter and others' No. 1 Wilson, shut down for casing on top of an oil sand at 1,590 feet; Lane and others' No. 1 Parrish, shut down for orders on top of an oil sand at 1,393 feet; Lynch and others' No. 1 Birdwell, coring and testing a sand at 1,310 feet; McGee Brothers' No. 1 Richardson, drilling in brown shale at 1,005 feet; Miner and others' No. 1 Netherton, drilling without any showing at 1,765 feet; Moore and others' No. 1 Wilson, drilling at 1,330 feet; Nants Oil Co.'s No. 1 Zotz, at 955 feet; Norton and others' No. 1 O'Donnell, drilling in blue shale at 1,155 feet; Oil Investment Co.'s No. 1-B Parrish, preparing to pump and test a sand with 800 feet of oil in the hole at 1,580 feet; Payne and others' No. 3 Wilmot, oil sand at 1,605 feet; also showing around 200 bbls. salt water; Petroleum Production Co.'s No. 5-C Wilson, resetting 6⅝-inch casing at 1,582 feet; Roberts and others' No. 4 Parrish, sand showing oil at 1,575 feet, shut down waiting on power; Richardson and others' No. 1 Scott, drilling in blue shale at 1,795 feet; Shaw and others' No. 3 Ferguson, drilling at 1,075 feet; No. 12 Ferguson, at 985 feet; Smith and others' No. 1 Wilson, shut down on top of a sand showing oil at 1,392 feet; No. 2 Wilson, oil sand at 1,595 feet and shut down. Staley and others' No. 3 Carter, drilling at 1,235 feet; Jerome Stone's No. 1 Wilson, at 1,015 feet; Sun Oil Co.'s No. 3 Farmer, spudding at 155 feet; Sunshine State Oil & Refining Co.'s Nos. 8 and 10 Carter Bros., spudding; Nos. 11 and 12 Carter Bros., are derricks. Swastika Oil Co.'s No. 9 Richardson, preparing to pump and test a sand at 1,365 feet; No. 1 Neal, shut down for cable

(Continued on Page 93)

NOTHING FOR GRIT TO CUT

Fig. 1100—Size 6x4x6″

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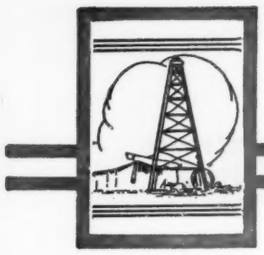

East Central Texas

By Staff Correspondent.

Powell production reached a peak of 277,450 bbls. last week and averaged 255,000 bbls. a day for the week. Total initial production in the field in five months over a million barrels. Many wells shut down on top of the sand until production drops to a point where new oil can be cared for.

CORSICANA, Texas, Oct. 22.—The average production of the Powell, Navarro County, Field for the week ending Saturday was 255,000 bbls. The production went to 277,450 bbls. on Thursday and dropped to 265,000 bbls. on Saturday.

The Humble Oil & Refining Co., which has the largest production in the field, is shipping a part of its crude to the gulf in the Sinclair Pipe Line Co.'s recently completed line and is reported to be sending a large quantity of oil around to the Standard of New Jersey refineries on the East Atlantic Coast in tankers.

The Humphreys Oil Co. has another chance for big production in the field if the pay streak continues southwesterly beyond the present known limits of the field. It has a 500-acre piece right in line, and not far southwest of the Smith Oil Co.'s big well on the Keith farm.

Thirteen new wells were reported from the close of last week's late report until the close of this review, the largest of them being a 12,000-bbl. producer of the Humble Oil & Refining Co. on the Davis farm, Barry survey; a 9,000-bbl. well of The Texas Co. on the Flemming farm, Harris survey and another 9,000-bbl. well of the Gulf Production Co., on the Barron farm, Harris survey.

Recent Completions

The McMan Oil Co.'s No. 5 Chapman, Anderson survey, sand at 2,805-61 feet; 3,500 bbls.

Humble Oil & Refining Co.'s No. 6 Davis, Barry survey, sand at 2,925-76 feet, 3,500 bbls.

Humphreys Oil Co.'s No. 47 McKie, Broyles survey, sand at 2,815-71 feet, 1,600 bbls.

Humphreys Oil Co.'s No. 53 McKie, Buffington survey, sand 2,886-2,965 feet, 4,500 bbls.

The Texas Co.'s No. 9 Flemming, Harris survey, sand at 2,930-55 feet, 8,000 bbls.

Gulf Production Co.'s No. 4 Barron, Harris survey, sand at 2,965-77 feet, 9,000 bbls.

Humble Oil & Refining Co.'s No. 7 Davis, Barry survey, sand at 2,921-64 feet, 12 000 bbls.

Humble Oil & Refining Co.'s No. 5 Davis, Barry survey, sand at 2,923-64 feet, 5,000 bbls.

Humble Oil & Refining Co.'s No. 11-A Gentry, Dunegan survey, sand at 2,915-36 feet, 750 bbls.

Humble Oil & Refining Co.'s No. 3-B Gentry, Taylor survey, sand at 2,919-41 feet, 200 bbls.

Humble Oil & Refining Co.'s No. 5-C Irvine, Taylor survey, sand at 2,892-2,925 feet, 200 bbls.

Gulf Production Co.'s No. 1 Barry estate, Barry survey, sand at 2,986-90 feet, pumping 52 bbls.

The Texas Co.'s No. 5 Kent, Smith survey, sand at 2,890-2,930 feet, 300 bbls.

The Humphreys Oil Co. abandoned the location for No. 2 Fair, McCandless survey. Number 1 on this lease, which is on the east edge of the northeastern end of the field, was a disappointment.

How Production Falls Off

One hundred and fourteen new oil wells completed in the Powell Field from the close of The Oil and Gas Journal's September monthly oil report up to October 18 yielded a total initial production of 300,706 bbls. The total initial production in September was 331,020 bbls.; in August, 203,619 bbls.; in July, 132,710 bbls., and in June, 45,300 bbls. This makes a total initial production of 1,013,355 bbls. since the Hughes Development Co. finished its big well on the McKie farm, late in May, which started all the subsequent big development. The production of the field on October 18 was estimated at 277,450 bbls., indicating a falling off from the initial production of 725,905 bbls., or over 70 per cent, with about 110,000 bbls. of the current production not a week old. Attention has several times been called to the rapid falling off of big wells in Powell from their initial output. The average initial production in Powell is freakish when compared with that of other great high-grade oil fields. Cushing never had a well that gauged 16,000 bbls. a day, while Powell has had a number as large as that and some that started at 20,000 bbls. The Tidal-Buttram Oil Co.'s big well on the Crews farm, reported last week, which opened up at 16 000 bbls., increased its production to 19,000 bbls. a couple of days later. Production in Powell could easily have been brought to 300,000 bbls. a day if operators had drilled in all the wells that are waiting with casing set.. Most of these are on locations between big wells and are regarded as sure-shot producers. All that held and is holding their owners back is that there would be no way of taking care of the crude without the loss of much of it before pipe line facilities were offered to handle it. The present day production is taking the capacity of the pipe lines and storage facilities. The total of crude in storage in Mexia and Powell at this time is close to 23,000,000 bbls. The Humble Oil & Refining Co. has bought two additional tank farms, one from the Humphreys Oil Co. and one from the J. K. Hughes Development Co., to take care of future excess production in the field. Estimates on what Powell will do in the future are no longer made. The field has upset so many prophesies and that no one is rash enough to make any new ones. It has reached a point where it rivals Long Beach in California, its average production last week having been equal to that of Long Beach the previous week. It was producing more oil at the close of the week than the aggregate of Burbank, Tonkawa, Cushing, Bristow and Hewitt, the five largest fields in Oklahoma.

New Work

New derricks up include the following: Atlantic Oil Producing Co.'s Nos. 6 and 7 Kellum, Harris survey; R. E. Brooks' Nos. 2 and 3 Cerf, Smith survey; Humble Oil & Refining Co.'s No. 5-A and 6-A and 1-B Cerf, Smith survey; Humble Oil & Refining Co.'s No. 15 Davis, Barry survey; same company's Nos. 15, 16, 17, 18, 19, 20 and 21, Humphreys, Smith survey; G. Kent's Nos. 11, 12 and 13 Kent, Harris survey; McMahon's No. 1 Cerf (6 acres), Smith survey; Humble Oil & Refining Co.'s Nos. 12-B and 13-B Ramsey, Smith survey; Empire Gas & Fuel Co.'s No. 2 Sweetman, Harris survey; Humble Oil & Refining Co.'s No. 1 E. L. Kent, Mathews survey; Kerby Petroleum Co.'s No. 1 Flemming, Greer survey; Skelly Oil Co.'s No. 1 Keith, 50 acres, Mathews survey; Sun Oil Co.'s No. 1 Barron, Harris survey; Smith Oil Co.'s No. 3 Keith, Mathews survey; Simms Oil Co.'s No. 1 Rose, Harris survey; and No. 1 Kellum, Greer survey, T. & B. V. Railway Co.'s No. 1 right of way, Mathews survey.

The Centers of Activity

On the Harris survey the Atlantic Oil Producing Co. has one well drilling on the Kellum farm; G. Kent has seven drilling on the G. Kent farm; The Texas Co. 11 wells drilling on the Flemming farm; Atlantic Oil Producing Co., 3 drilling on the Kellum farm; Collins & Wheelock, 1 on the G. Kent 36 acres; Empire Gas & Fuel Co., 1 on the Sweetman farm; Gulf Production Co., 4 on the Barron and 5 on the Mrs. Crews farms; Humble Oil & Refining Co., 4 on the Mrs. Crews farm; Tidal Oil Co., 6 on the Crews farm and 7 on the Phillips farm.

On the Smith survey R. E. Brooks has 2 drilling on the Cerf farm; Elliott and others, 1 on the Hill farm; Gulf Production Co., 1 on the Bush farm; Humble Oil & Refining Co., 2 on the Cerf farm, and 7 on the Humphreys farm, 3 on the Ramsey farm and 6 on the Mrs. Walker farm; 1 on the Ramsey B farm; New Domain Oil Co., 3 on the Kent farm; Millerman & Dorney, 1 on the Clements farm; Humble Oil & Refining Co., 4 on the Ramsey A farm; Humphreys Oil Co., 1 on the Robert Kent farm; Skelly Oil Co., 1 on the Ramsey; Tidal Oil Co., 1 on the Ramsey B; The Texas Co., 3 on the Kent farm; Simms Oil Co., 1 on the Barron farm.

On the Barry survey the Humble Oil & Refining Co. is drilling or rigged up on 12 wells on the Davis farm; 2 on the Flemming B farm; 1 on the Murchison farm. Kirby Petroleum Co., 3 ready for completion on the Brown farm.

CONSIDERABLE TEXAS WILDCAT DEVELOPMENT BEING CARRIED ON

By P. L. McGreal

HOUSTON, Texas, Oct. 20.—A review of operations in Texas at this time in the face of a declining market for crude and the possibility that still lower prices will prevail before the bottom is reached, presents an interesting study. It demonstrates that the lure of the drill is too strong for the big fellow or the little fellow to overcome as long as there is money available to pay the cost of operating. Figures show that the advice to curtail operations is ignored by both the large corporations and the individual operator. While work is practically suspended in some sections it is being conducted with unprecedented activity in other places. Witness the Powell and Luling fields, where hundreds of thousands of dollars are being expended and thousands of barrels of oil brought to the surface for which, the wise men of the industry say, there is no demand.

Credit balance quotations have been lowered to where it is unprofitable to pump small wells in most of the fields of the State, notably so in the Gulf Coast pools where a world of water must be handled and wells are pumped 24 hours per day ahead of the water. To shut in these wells means that hundreds of them will be ruined. The only paying wells are those that flow.

A study of the monthly report of operations appearing in The Oil and Gas Journal shows a total of 292 wildcat wells drilling or temporarily shut down with 52 derricks up. These are located in 83 counties, stretching from the Red River to the Gulf of Mexico and from the Sabine on the east to the New Mexico border. Many of these are the rankest kind of wildcats, while others seek an extension of proven fields or pools. Estimating the average cost of each test at $15,000—a number in the Coastal regions will exceed $100,000—shows that the sum of $4,245,000 is being expended in Texas alone in the search for new territory or the extension of the present limits of producing fields. The estimated cost is considered very low for each well.

This immense amount of money is being expended by the large corporations, smaller companies and individual operators, notwithstanding the advice so freely given to "shut down" operations. Each seems to think that the advice belongs to the other fellow. The sum mentioned does not include bonus figures paid for acreage and other incidentals connected with drilling for oil either in proven territory or wildcat regions.

Drilling Operations

The following table shows the wildcats drilling or shut down and derricks and rigs standing in the State:

Gulf Coast, Southwest and West

County	Drlg.	Shut Down	Rigs
Angelina	3	2	4
Austin	2	0	0
Atascosa	2	2	2
Bastrop	2	0	1
Brewster	0	2	0
Brazoria	1	3	1
Brazos	1	0	0
Chambers	2	0	0
Colorado	1	0	0
Bexar	2	0	0
Crockett	2	0	3
Culbertson	4	0	1
Fort Bend	2	2	1
El Paso	0	1	0
Galveston	4	4	3
Gonzales	2	0	0
Guadalupe	7	4	1
Grimes	1	0	0
Harris	3	1	1
Houston	2	0	0
Jefferson	4	2	1
Jackson	0	0	1
Jim Hogg	4	8	0
Duval	3	3	1
Kleberg	2	0	1
Karnes	1	0	0
Caldwell	3	0	0
Liberty	2	0	0
Fayette	0	0	1
Live Oak	3	6	1
Matagorda	1	0	0
Montgomery	2	4	1
Maverick	3	2	1
Nacogdoches	1	0	0
Orange	1	0	0
Dimmitt	0	0	1
Medina	5	1	3
Pecos	2	2	1
Reagan	3	3	0
Reeves	1	7	0
San Patricio	2	2	0
Valverde	5	0	3
Wharton	0	1	0
43	90	82	39

East Central Texas

Anderson	2		1
Bowie	2		2
Cass	2		0
Cherokee	8		0
Dallas	5		0
Ellis	1		0
Freestone	4		0
Falls	8		1
Henderson	4		3
Hunt	2		0
Kaufman	2		0
Leon	4		0
McLennan	3		0
Milam	5		1
Red River	6		0
Robertson	3		0
Raines	1		1
Smith	3		1

(Continued on Page 86)

This Tee Casing Head has also become one of the group of "Standard Equipment."

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Along with our common Casing Head, Control Casing Head and Roller Oil Saver, it is being adapted for standardization by many of the foremost producers.

THE OIL WELL IMPROVEMENTS CO.
Tulsa, Okla.

Fields of the Central West

By Whit

J. H. Young and others get 60-bbl. flush producer, Princeton, Indiana, Field. B. Porter and others' No. 15 J. H. Haley, Hancock County, Ohio, pumps 40 bbls; Five Point Oil Co.'s No. 4 Marshal Bruce, Wood County, 20 bbls.; Federal Oil Co.'s No. 2 Franz Etzkorn, Allen County, 30 bbls.

FINDLAY, Ohio, Oct. 22.—Few completions are reported for the week from the various producing States that constitute what is known as the Central West Field. The old Lima Field of northwestern Ohio is doing about as well as any of the fields, although a considerable amount of drilling is being done in the eastern Kentucky division, but the past several days fail to bring forth any new wells of note. Central Ohio is holding its own as usual, as the various gas companies are doing everything possible to develop new gas leads and secure an ample supply for the many trunk lines feeding natural gas to hundreds of cities. Illinois and Indiana are doing but little work and no renewal is expected until spring.

A deep test was made by E. R. Edson & Son on the northeast corner of the T. C. Boes farm, Section 28, Clinton Township, Seneca County, in the Tiffin district in the Northwestern Ohio Field. This well reached the top of the Trenton at 1,703 feet and the drill sent to 460 feet in the sand to a total depth of 2,163 feet. The well failed to show any promise as a producer and was abandoned. In the same field but in Pleasants Township, same county, D. R. McCray drilled No. 6 on the T. B. Toombs, Section 28. Top of sand was found at 1,590 feet and drilled 142 feet into a depth of 1,732 feet and abandoned as a dry hole.

In Section 25, Adams Township, Lucas County, just west of Toledo, Farnsworth and others' test on the southwest corner of the R. E. Farnsworth farm, reached top of the Trenton at 1,332 feet and drilled 76 feet in, where a dose of salt water was encountered and the well was put on the pump and showed 75 bbls. of water. It is doubtful if it will make a commercial oil well, although it will be given a most thorough testing in hopes of bringing oil after the water is exhausted. Should it prove a well of any value, it will extend the old producing limits several miles.

Paulding County

In Brown Township, Paulding County, the Putnam County Producing & Refining Co. drilled in its initial well on the W. H. Patterson, Section 30, and secured a 10-bbl. pumper. This well is close to other wells drilled on adjoining farms, in the same section.

In the vicinity of Elmore, 20 miles southeast of Toledo, in Harris Township, Ottawa County, T. F. Lewis and others' No. 2 on the northeast corner of the Carl Blausey, Section 19, pumped 4 bbls. at a depth of 1,320 feet.

Just at the edge of Cygnet, in Section 6, Bloom Township, Wood County, the Ohio Oil Co.'s No. 1 on the Frank B. Loose lease, went to a depth of 1,507 feet, and something more than 300 feet in the sand, encountering what is reported a 5-bbl. pay. This well is a location west from the No. 1 well on the same farm, drilled a couple of months ago by the Western Ohio Oil Co., reported as a flush of 160 bbls. In Middleton Township, same county, the Five Point Oil Co.'s No. 4 Marshal Bruce, Section 17, is reported a 20-bbl. pumper at 1,303 feet. In Perry Township, near Hatton and north and west of Fostoria, same county, Dennis Brothers drilled in a very light gas well at a second test on the southwest corner of the C. J. and J. F. Breslen, Section 6. Top of the Trenton was found at 1,160 feet and drilled 80 feet in.

Between North Baltimore and Findlay, in Section 14, Allen Township, Hancock County, P. J. Pool Estate's No. 10, Kuhlman farm, is reported a dry hole.

Near Lima, in Spencer Township, Allen County, the Federal Oil Co.'s No. 2 Frank Etzkorn, Section 15, is a 30-bbl. pumper. In the same township, the Ohio Oil Co.'s No. 4 on the northwest corner of the Agnes Louth, Section 25, pumped 12 bbls. In Marion Township, the Federal Oil Co.'s second test on the John Lucius, Section 10, is a 10-bbl. pumper.

In Logan Township, Auglaize County, Loeber & Work's test on the northeast corner of the F. Daniels, Section 6, pumped 7 bbls.

In York Township, Van Wert County, the Wheeler Oil Co.'s test on the southwest corner of the Richard Evans, Section 23, pumped 20 bbls., extending the old producing areas of that county a short distance.

In Union Township, Hancock County, the Ohio Oil Co. has abandoned Nos. 1, 3, 4, 5, 6, 8 and 9 H. F. Gorby, Section 24, drilled many years ago. In Orange Township, same company did the same with Nos. 1, 2, 3 and 4 Henry Arnold, and Nos. 1, 2 and 3 A. W. Scothorn, Section 10. In Eagle Township, same county, B. Porter and others' No. 15 on the J. H. Haley, Section 5, pumped 40 bbls., and No. 16 is drilling. Fuller and others are drilling No. 13 Jake Fellers, Section 8. In Bigliek Township, Cochran & Moore are drilling a second test on the J. D. Moore, Section 17. No. 1, recently completed, showed 23 bbls. In Liberty Township, A. N. Bryson and others are drilling No. 1 J. B. Wagner, Section 21, and in Pleasants Township, in the McClure district, the Bath Township Oil Co. is drilling No. 2 Cain & Henning farm, Section 14.

In Lake Township, Wood County, C. F. Zeising and others are drilling No. 3 Emil Berndt, Section 36.

In Sandusky Township, Sandusky County, the Paragon Refining Co. pulled out old No. 2 well on the P. H. Hetrick, Section 7. The Ohio Oil Co. abandoned No. 6 J. Waggoner, Section 6, and the John Neisett Oil Co. pulled out No. 1 George Welbeton, Section 4.

In Harris Township, Ottawa County, the Zorn-Hornung Co. is drilling No. 6 Belle Clay, Section 20, and the Scott Oil Co. is drilling No. 1 E. Sarnes, Section 21.

During the week a total of 24 completions were reported from the Central Ohio Field, with 3 oil wells, 6 dry holes and 15 gas wells. The most important find in the oil end was the test drilled by Brinkerhoff and others on the F. Fike, Section 23, Cannan Township, Wayne County. When drilled into the sand there was only a very light showing of gas and in hopes of increasing the gas flow was given a shot but instead brought in what is reported as a 15-bbl. oil well, with about 30,000 feet of gas. In the drilling for gas over the various counties during the past year or so many oil producers have been found that make the average operator believe that oil can be found most anywhere within the old gas producing limits, and when a better market value comes for the product, a large part of the old gas field will be tested out for oil. There are three known stratas that are liable to produce more or less oil. First comes the shallow Berea sand, then a stray sand below 2,000 feet and then the Clinton formation, and what lies below that is still unknown, as the Trenton Rock is down deeper, or close to 1,200 feet below the bottom of the Clinton limestone.

In Litchfield Township, Medina County, Hulse & Koontz drilled in a test on the Andy Jekins, Lot 28, that is reported at 5 bbls. from the Berea sand. In Brown Township, Knox County, in the same sand, the East Ohio Gas Co.'s No. 3 on the Gustave Sniveley, Section 28, is estimated at 10 bbls. flush.

In Mohican Township, Ashland County, the Logan Gas Co. drilled a dry hole in a second test on the J. and M. Lybarger 126 acres, Section 30, and the same company found a duster in a test on the O. H. Vance, Section 5, Orange Township, same county, and started the drill at its No. 3 William Monteith, Section 7, same township. In Hanover Township, same county, the East Ohio Gas Co. is drilling No. 1 on the F. M. Date 160 acres, Section 8, and made a location for No. 1 on the Emanual Kick 60 acres, Section 26, and for No. 5 on the J. B. Date 26 acres, Section 17.

Medina County

In Liverpool Township, Medina County, the Logan Gas Co. drilled a light gas well at a test on the William Nilges, Section 20, while the Ohio Fuel Gas Co. got a dry hole in a test on the G. F. Mohler, Section 19. This company drilled a light gas well at No. 2 A. F. Collins, Section 10, Lafayette Township, and is drilling No. 1 G. W. Carston, Section 9. Daugherty Brothers made a location for a test on the Lewis H. Jones 26 acres, Section 24, Westfield Township, same county. In York Township, the Logan Gas Co.'s No. 1 Allen B. Weisz, Section 13, was a dry hole; is drilling No. 3 Gayer 35 acres, Section 22, and getting ready to start No. 2 Allen B. Weisz farm. Ohio Fuel Gas Co.'s No. 2 George Acker, Section 3, is a fair gas well, with No. 3, same farm, drilling. Same company's No. 2 A. M. Heckert, Section 3, was dry.

In Grafton Township, Lorain County, the East Ohio Gas Co. drilled a nice gas well at a second test on the E. F. Schaffer, Lot 67, and started the drill at No. 3, same farm.

In Congress Township, Wayne County, Hulse & Koontz are drilling a test on the J. B. and Allie Gindelsperger 178 acres, Section 14. In Wayne Township, the Klise-Eckstein-McCann Co. drilled in the best gas well of the week in a test on the Martin Cole, Section 4. In Cannan Township, the Logan Gas Co. found a fair gas well at a second test on the A. A. Fetzer, Section 8. Central Ohio Gas Co.'s No. 1 F. U. and E. Jordan, Section 12, is an average gas well, and drilling No. 1 H. E. Gayer 33 acres, Section 2. Caskey & Peake have an average gas well at a test on the Bryon Brady, Section 11. Creston Gas Co. is drilling No. 1 D. Willis 82 acres, Section 21, and C. S. Eby and others are drilling No. 1 Eby 40 acres, Section 12. Ohio Fuel Gas Co. is drilling No. 2 D. V. Rowe, Section 16. The Logan Gas Co. is drilling a test on the S. Garn 291 acres, Sec-

(Continued on Page 97)

Pennsylvania-West Virginia

By D. S. Wakenight

PITTSBURGH, Pa., Oct. 22.—Development work in the Eastern fields showed a little improvement in the number and size of the wells completed. All completions are located in the defined districts, making their location of less importance. The only change in market conditions was the reduction of gasoline 2 cents a gallon, bringing motor gasoline down to 19 cents and 68-70 to 21 cents, exclusive of the State tax of 2 cents a gallon.

In Portland district, Preston County, West Virginia, the Hope Natural Gas Co. has started a deep test on the Joseph Gordon farm. It expects to drill this test to a depth of 7,000 feet unless oil or gas is found in commercial quantities before going so deep. It is expected that oil or gas, possibly both, will be found in the Oriskany sand.

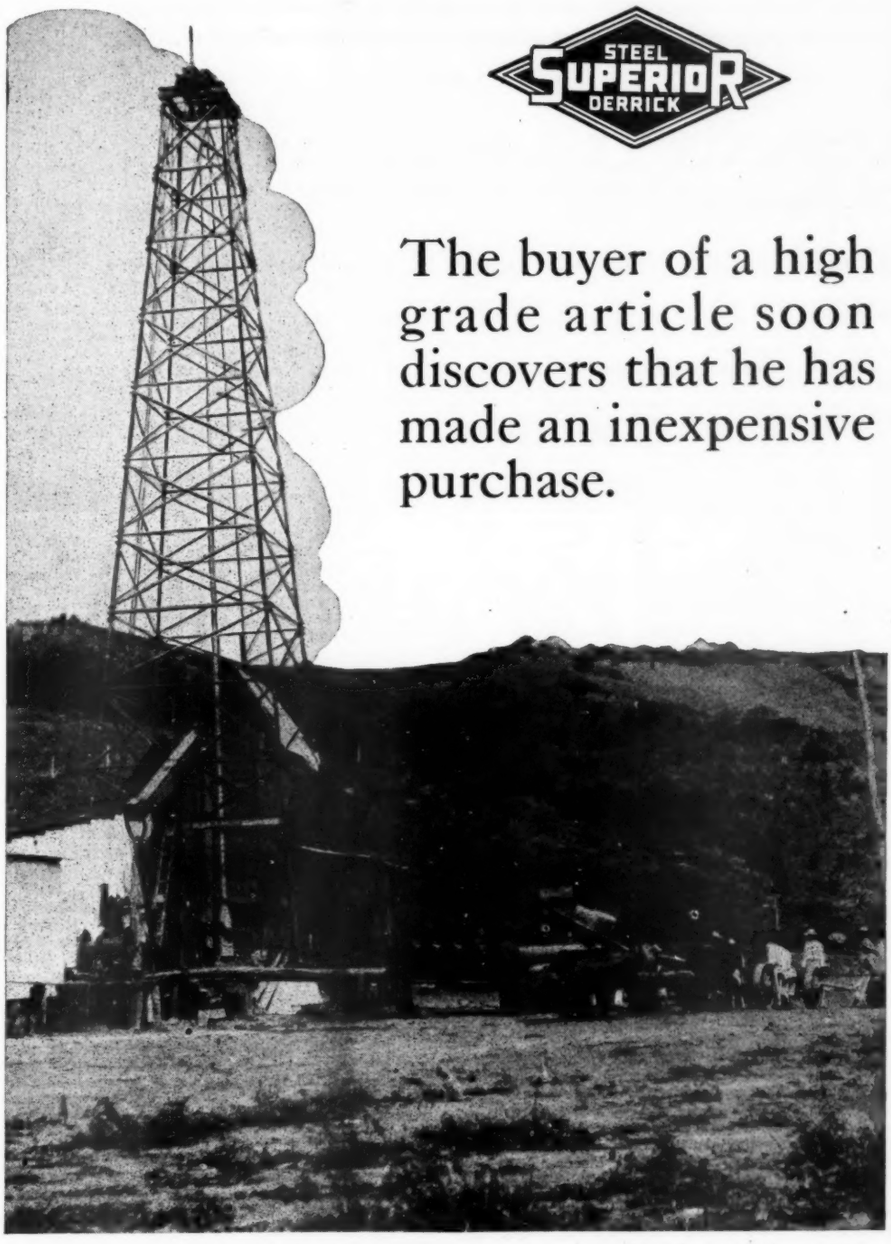
Southeast Ohio Has Big Well

The outstanding feature in the Eastern fields during the past week was the completion of a near-gusher in the deep sand territory in southeastern Ohio. It is the Montana Oil & Gas Co.'s No. 4 on the Levi Kennedy farm, located in Section 10, Rush Creek Township, Fairfield County, and in a section that has been furnishing some good producers, the best being located on the Kennedy farm. After given a shot in the Clinton sand, the well produced 275 bbls. the ensuing 24 hours. In the same section, the Rushville Trust Co. completed and shot in the Clinton sand its test on the George Green farm. If good for anything, it will not be better than a light pumper. The location is 800 feet south of the Carter Oil Co.'s test on the B. F. Seifert farm. In Section 16, the Blume Oil & Gas Co.'s test on the Ray Johnson farm is a duster in the Clinton sand. In Section 10, the Carter Oil Co. has completed and shot a test on the Charles Brandt farm. The hole has filled up 1,700 feet with fluid and it is probably good for 20 or 25 bbls. a day. In the same section, C. Burnsworth & Co. have completed a test on the H. D. Wagner 3-acre lot. It is a duster.

Light Pumper in Perry County

Located in Section 35, Coal Township, Perry County, the Sunday Creek Coal Co. completed and shot its No. 111 on the Sunday Creek Coal Co.'s property. It is a very light pumper. In Lot 13, Licking Township, Licking County, W. W. & A. T. Wehrle have drilled a test on the Hawkins farm through the Big Lime and showing for a 15-bbl. pumper. In Section 3, Green Township, Hocking County, Scott Westbrook & Co. have drilled a test on the Charles Lehman farm through the Berea grit. It is a gasser good for 1,000,000 feet a day. In Section 18, Harrison Township, Knox County, Snyder & Rohrer have completed and shot in the Berea grit No. 4 on the Hugh L. Green farm. It is a 5-bbl. pumper. In Madison Township, Licking County, Spindler & Donaldson have a 4-bbl. pumper in the Berea grit at No. 3 on the C. A. Bounds farm. In the same locality, the same parties have a 2-bbl. pumper at a test on the C. R. Fetty farm. In the old Corning district, Section 33, Pleasant Township, Perry

(Continued on Page 80)



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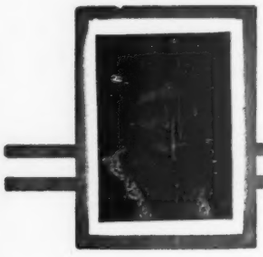

North Louisiana-Arkansas

By M. L. Vaughn

Higgins Oil & Refining Co.'s No. A-2 Murphy, Union County, makes 6,000 bbls.; Arkansas Pipe Line & Navigation Co.'s No. 3 Harrell, 600 bbls.; Barnsdale & Foster's No. 1 Murphy swabs 1,200 bbls., and Phillips Petroleum Co.'s No. 3 Alphin is a 500-bbl. pumper.

SHREVEPORT, La., Oct. 22.—Light gains in six areas were offset, principally by a reduction in daily pipe line runs from the heavy Smackover district and of nearly 1,000 bbls. in those from the Bellevue Pool, with the result that an aggregate of over 5,000 bbls. reduction is shown from the combined North Louisiana and South Arkansas areas. The distribution follows:

North Louisiana		
Caddo, light	8,620	
Caddo, heavy	2,440	
De Soto—Red River	5,695	
Elm Grove	1,285	
Haynesville	24,135	
Homer	9 645	
Bellevue	6,255	
Total		58,075
South Arkansas		
El Dorado	10,810	
Calion	8,775	
Smackover, light	16,695	
Smackover, heavy	85,605	
Stephens	2,970	
Total		124,885
Total, both areas		182,960
Total last week		188,070
Decrease		5,110

Probably the outstanding item of interest throughout the North Louisiana-South Arkansas territory is the exceptional showing of activity in Union Parish evidenced in this week's report. The Union Power Co. has started development of its holdings in this area and has derricks up for two wells and made locations for two more in three sections approximately 10 miles west of Bastrop.

J. P. Evans and associates have made location for a test 12 miles northeast of Farmerville in Section 16-22-2e. Woodard & Clarke have derrick pattern on location for No. 1 Clark, in Section 17-23-2, 6 miles east of the location where the so-called O'Brien well attracted so much attention with its showing of oil and where other operations are now being prosecuted to determine the possibilities of its surrounding area.

Union County Completions

Completions in the Union County area of the Smackover district resulted in an aggregate new production of 10,690 bbls. from 15 producers, one of which was a gasser. Two dry holes were abandoned.

The best well was brought in by the Higgins Oil & Refining Co. with 6,000 bbls. from No. A-2 Murphy, Section 14-16-15, completed at 2,010 feet. The Arkansas Pipe Line & Nav. Co. completed No. 2 Harrell, Section 17-16-15, swabbing and flowing 600 bbls. from 2,070 feet.

Barnsdale & Foster completed No. 1 J. Murphy, Section 17-16-15, swabbing 1,200 bbls. from 2,115 feet. The Big Four Oil Co. abandoned No. 1 Rogers, Section 17-18-17, at 2,820 feet. Delukie and others abandoned No. 1 G. E. Murphy, Section 8-16-15, at 2,057 feet.

The Humble Oil & Refining Co. completed No. 2 Jee Lawton, Section 7-16-15, at 2,109 feet, swabbing 250 bbls. and No. 4 Pate, Section 10-16-15, pumping 150 bbls. from 2,016 feet

The Magnolia Petroleum Co. completed No. 3 Moody, Section 17-17-14, at 2,170 feet, flowing 225 bbls. and No. 4 Moody, Section 8-17-14, at 2,135 feet, flowing 250 bbls. The Murphy trustees completed No. 3 Lawton, Section 7-16-15, at 2,100 feet with 10,000,000 feet of gas and a small spray of oil.

The Phillips Petroleum Co. completed No. 3 Alphin, Section 11-16-15, pumping 500 bbls. from 2,000 feet. The Pure Oil Co. got a 200-bbl. pumper in No. 1 Craig, Section 15-16-15, completed at 2,015 feet.

The Roxana Petroleum Corp. completed No. 1 J. Burns, Section 20-16-15, pumping 140 bbls. from 2,085 feet.

Smitherman & McDonald's No. 2 Holloway, Section 6-16-16, is flowing 25 bbls. from 2,265 feet. Stock and associates are pumping 200 bbls. from No. 3 Polk and Ezell, completed at 2,145 feet in Section 18-17-14.

Tarver and others completed No. 3 Saxon, Section 5-16-16, flowing by heads at the rate of 800 bbls. from 2,265 feet. The Texas Co. completed No. 1 J. T. Murphy, Section 22-16-15, at 2,055 feet, pumping 150 bbls.

Drilling Operations

New operations in Union County failed to keep pace with the completions during the past week and the summary of operations indicates a loss of 8 per cent in active operations in this area.

The Arkansas Pipe Line and Nav. Co. has derrick up for No. 4 Harrell, Section 17-16-15. Bondurant and others have started drilling No. 1 Tuberville, Section 9-18-12. Browder and others have derrick up for No. 1 Burns, Section 17-16-15.

Crawford & Sebastian are bailing to test 53 feet of sand at 2,000 feet in No. 6 Giller, Section 14-16-15.

Dulukie and others have set 10-inch surface casing in No. 2 Harrell, Section 17-16-15, at 70 feet. The Dunn Oil Co. set 6-inch at 1,930 feet in No. 1 McKinney, Section 18-16-15.

The Federal Petroleum Co. is drilling at 1,450 feet in No. 2 Hicks, Section 20-16-15 and at 2,610 feet in No. 2 Union Saw Mill, Section 28-17-12 and has milled through casing at 600 feet and is now drilling at 1,110 feet in No. W-5 Wells where they tested dry and had a bad fishing job at 1,945 feet.

Garrett and others set surface 10-inch casing and have drilled to 200 feet in No. 1 Robinson, Section 23-18-12. The Gulf Refining Co., while deepening No. 4 McDonald, an old well, in Section 1-18-16, had the well blow in when they were coming out of it at 2,260 feet, with a flow of gas estimated at 25,000,000 feet. They have the well closed in while the derrick is undergoing repairs.

Hall and Gann are drilling at 960 feet in No. 2 Graves, Section 3-16-15. Harrell and others have rigged up No. 1 Tule, Section 11-19-12. The Higgins Oil & Refining Co. set 6-inch at 1,900 feet in No. 1 Jameson, Section 21-18-15. Y. E. Hildreth deepened No. 1 Smith, Section 2-16-17, an old well, to 2,840 feet and has plugged back to 2,310 feet. Hollyfield and others set 10-inch at 60 feet in No. 4 Giller, Section 11-16-15. The Humble Oil & Refining Co. is waiting on standard rig for No. 1 Saxon, Section 32-15-16, standing with 1,000 feet of oil in hole at 2,260 feet.

King & Timberlake set 6-inch casing at 1,860 feet in No. 1 Hodges, Section 1-16-17.

The Magnolia Petroleum Co. is drilling at 1,195 feet in No. 2 Campbell, Section 13-16-17. In Section 8-17-14 has derrick up for No. 5 Moody, and is drilling at 1,800 feet in No. 1 Neely, same section. J. Marr is shut down to repair boiler at 975 feet in No. 1 J. Murphy, Section 17-16-15 and the Marr Oil Corp. is rigging up to drill No. 2 Moody, Section 17-17-14. The Murphy trustees have No. 2 Lawton, Section 7-16-15, waiting orders at 2,100 feet after plugging back to 2,090 feet.

The Natural Gas & Petroleum Co. is drilling in gumbo at 2,240 feet in No. 1 Primm, Section 1-16-16. The Pure Oil Co. set 10-inch casing at 145 feet in No. 2 Craig, Section 15-16-15.

Smitherman & McDonald have No. 3 Saxon, Section 5-16-16, shut down waiting orders at 2,625 feet. The Standard Oil Co. is arranging to bail at 2,260 feet in No. B-2 Saxon, Section 5-16-16. The Sun Oil Co. is drilling at 1,550 feet in No. 5 and at 1,510 feet in No. 6 Hays, Section 3-16-15.

The Texas Co. is waiting on liner to test at 1,975 feet in No. 2 Guy Hays, Section 4-16-15. The Tidal-Osage Oil Co. is drilling in gumbo at 1,860 feet in No. 1 Vestal, Section 17-16-15.

The Vitek Oil Co. is waiting on standard rig for No. 3 Allen, Section 18-17-14, at 2,170 feet, with 1,600 feet of oil in hole. Weatherbee and others did not plug back in No. 1 Holloway which stands with 1,500 feet of fluid, 90 per cent salt water and in which they are bailing at 2,295 feet. Woodley and others set 10-inch at 120 feet and have drilled to 1,310 feet in No. 7 Van Hook Section 8-18-14.

Ouachita County Completions

Only two completions are recorded for the Ouachita County area in the Smackover district during the past week. Johnson and associates' No. 1 Fincher, Section 29-15-16, is flowing 75 bbls. through 2½-inch tubing from 2,260 feet and the Standard Oil Co. completed No. 1 Umsted, Section 32-15-15, flowing 30 bbls. from 2,015 feet.

Ouachita Drilling Operations

Although only two new operations in well developed areas are in evidence in this section of the Smackover Field, active operations have been started on 11 locations where nothing further than the erection of a derrick had been accomplished up to last week.

The American Trust Co. set 6-inch at 1,860 feet in No. 1 Patton, Section 31-15-16. The Arkansas Natural Gas Co. is waiting on standard rig for No. 1 Snyder, Section 34-15-16, with 1,200 feet of fluid in hole at 1,990 feet, and is swabbing with 15 feet of sand at 1,980 feet in No. 3 Snyder, in the same section.

Bashara and associates are arranging to set 6-inch at 1,860 feet in No. 1 Patton, Section 32-15-16. Bradstreet tested salt water at 2,050 feet in No. 2 Robertson, Section 25-15-16, and is arranging to plug back 7 feet. Bray-Hawthorne, Inc., are drilling at 1,250 feet in in No. 1 Halford, Section 20-14-16, tested a show of gas at 1,990 and 2,195 feet and are arranging to drill deeper in No. 1 Hughes, Section 21-15-16. Burch-Walker has derrick up for No. 1 fee, Section 30-15-16; set 6-inch at 1,865 feet in No. 1 Patton; is drilling in rock at 1,100 feet in No. 2, and set 10-inch at 170 feet in No. 3 Patton, all in Section 31-15-16.

The Clark Trustees are drilling at 1,925 feet in No. 2 Berry, Section 24-15-17. The El Dorado Union Oil Co. set surface 10-inch and drilled to 660 feet in No. 1 Smith, Section 36-15-17, and started drilling No. 1 Shirey (formerly reported Simson), Section 30-15-16.

The Forest Oil Co. is arranging to shoot casing at 2,250 feet in No. 3 Hardin, Section 22-15-16, and cement back from 2,265 feet. In Section 28-15-16, it is arranging to deepen No. 1 Mullins, an old well, now at 2,075 feet. The Gulf Refining Co. is drilling in clay and sand at 2,180 feet in No. C-1 J. H. Dawson, Section 10-15-18.

J. L. Hines set surface 10-inch at 65 feet in No. 1 fee, Section 20-15-16. The Houston Oil Co. set 6⅝-inch at 1,945 feet in No. 1 Reynolds, Section 27-15-13. Hunt and associates' No. 2 Myers is shut in waiting orders at 2,300 feet after making a head 10 per cent b. s. and water with 32 feet of broken sand, in Section 29-15-16. In Section 30-15-16, they have derrick up for No. B-1 Myar.

Johnston and others have started drilling No. 2 Fincher, Section 29-15-16. The Johnston Drilling Co. is waiting on standard rig at 2,270 feet in No. 1 Wells, Section 25-15-17, with 1,200 feet of fluid in hole.

Magnolia Operations

The Magnolia Production Co. is drilling in sand at 2,290 feet in No. 1 Sherley Berg, Section 29-15-16 and the Magnolia Petroleum Co. has started drilling and set 15½-inch at 60 feet in No. 1 Patton, Section 32-15-16, and at 70 feet in No. 2 W. A. Smith, Section 31-15-16. The Mangus Oil Co. is drilling at 1,925 feet in No. 2 Mangus, Section 24-15-17. The Murphy Trustees are drilling at 1,100 feet in No. 2 Snyder, Section 34-15-15.

The Owenwood Oil Corp. lost 1,600 feet of 6-inch when at 1,860 feet in No. 1 Snyder, Section 34-15-15, and is fishing for 650 feet of 4-inch drill stem lost while sidetracking. The Riggs Drilling Co. is waiting on 4½-inch and liner for No. 1 Myers Estate, Section 32-15-16, to complete at 2,265 feet.

The Simms Oil Co. set surface 10-inch at 40 feet in No. 3 Hildebrand, Section 28-15-15, and J. R. Smith, set surface 10-inch at 80 feet in No. 1 La Grone, Section 30-15-16. The Smith Refining Co. set 6-inch at 1,850 feet in No. 2 Myar Estate, Section 30-15-16, and is drilling at 1,950 feet. In the same section it has derricks up for No. 2 McRae. Solmson and others set 6-inch at 1,830 feet in No. 1 fee, Section 30-15-16. The Standard Oil Co. set 6-inch at 1,850 feet in No. 9 Hardy, Section 4-16-15, and tested 4,000,000 feet of gas with oil estimated at 75 bbls. in No. 1 Griffin, Section 33-15-15. In Section 29-15-16 it set 6-inch at 1,860 feet in No. 1 Solmson Trustees. The Sun Oil Co. is rigging up to drill Nos. 1 and 2, Section 31-15-16.

The Transcontinental Oil Co. is drilling in shale at 2,780 feet in No. 1 Milner, Section 20-15-16. The V. K. F. Drilling Co. is drilling at 1,000 feet in No. 1 Patton, Section 32-15-16.

Stephens Field

One completion was accomplished in the Ouachita County area of the Stephens Field during the week. This was the Mutual Oil Co.'s No. 1 Hamilton, Section 19-15-19, completed at 2,140 feet, pumping 20 bbls.

The Arkansas Investment Oil Corp. is arranging to test 4 feet of sand at 1,440 feet in No. 2 Wesley, Section 15-19-11. The Hopkins Trustees have shut down for fuel at 2,010 feet in No. 1 Allen, Section 33-14-19. The Leeper Trustees are setting liner to test 4 feet of shale with a show of oil and no gas at 2,190 feet in No. 1 Wesson, Section 23-15-18.

The Mutual Oil Co. set surface 10-inch at 60 feet in No. 4 Hamilton, Section 19-15-19. The Ohio Oil Co. set 6-inch at 2,045 feet in No. 1 Grayson, Section 29-15-19. The Standard Oil Co. is waiting on standard rig for No. 1 L.

(Continued on Page 105)

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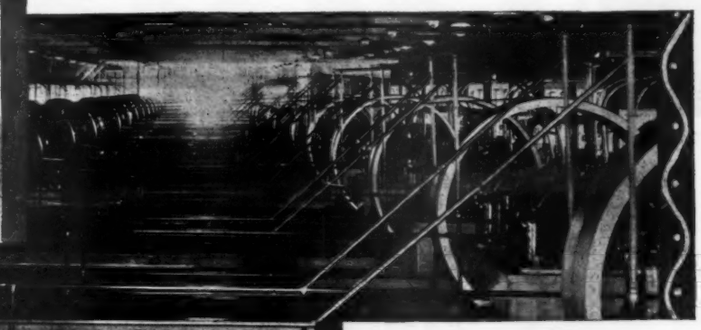

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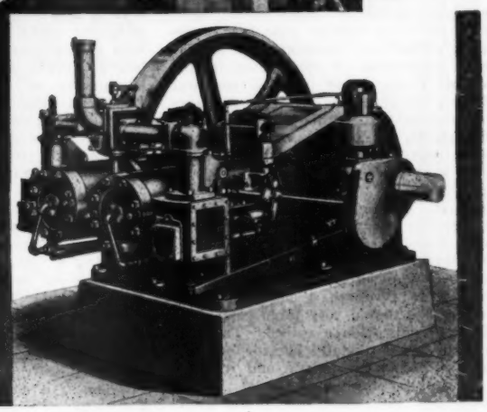
"Western" Oil Field Engine and Reverse Gear Catalog No. 304



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WESTERN

Gulf Coast Oil Operations

By P. L. McGreal

Link Oil Co.'s No. 2 Peveito, Hull, pumping 175 bbls.; Humble's No. 45 Smith, Goose Creek, 150; G. M. Co.'s No. 1 Cox, McMullen County, 150; Laurel Oil Co.'s No. 4 Mid Ojulas, 150 bbls.; Magnolia Petroleum Co.'s No. 5 Merriweather, Luling, showing for 250 bbls.

HOUSTON, Tex., Oct. 22.—What are generally classed as "independent" operators, or those without pipe line or refinery affiliations, constitute but a very small proportion of the whole in the Coastal Pools, where fully 85 per cent of the gross output is owned by the large corporations with both lines and refinery connections. It has now reached a point where many of the small wells will have to be shut down, as it is unprofitable to pump them at the lower prices for the product. Practically all these pumpers and indeed many of the flowing wells make more or less saltwater and it is necessary to pump them 24 hours per day to keep ahead of the water. To shut them down for even a short period of time means that a very large percentage of these wells will be ruined. Thus the outlook for the small operator or company is rather pessimistic and it is no secret to say the operator of limited means and his royalty owner are growing resentful. Judging from the comments heard on the streets, in the pools and in offices it can be predicted that the next session of the Texas legislature will be called upon to consider a flood of bills, all embracing proposed regulatory enactments.

Gross Daily Average Production

The combined daily average production of the Coastal Pools, the southwest districts of Somerset and Laredo and the shallow sand section of Milam County and miscellaneous districts is estimated at 96,255 bbls. this week, compared with an estimate of 90,240 bbls. last week. The estimate for the Gulf Coast Pools alone is placed at 88,900 bbls., against an estimate of 90,240 bbls. last week, representing a decrease of 1,250 bbls. The estimate for the Luling Field is placed at 8,900 bbls., which is not included in the grand total. The estimate for each district is as follows:

District—	Bbls.
Batson	1,120
Blue Ridge	835
Barber Hill	375
Dayton	75
Damon Mound	2,080
Edgerly	410
Goose Creek	13,400
Humble	6,300
Hull	20,450
Jennings	750
Markham	110
Orange	14,250
Pierce Junction	560
Spindletop	850
Saratoga	1,760
Sour Lake	5,475
Somerset and Piedras Pintas	3,420
Vinton	5,860
Welsh and Anse La Bute	80
West Columbia	14,250
Miscellaneous	3,845
Total	96,255

Coastal Pools

Operations in the Coastal pools are down to bed rock, with less than half a dozen new holes starting and these are for the purpose of complying with lease obligations. Orange and Hull are the only two spots where there is any semblance of activity and even in these districts operations are far below normal. Goose Creek has dropped down to half a dozen rigs running and West Columbia has just a few working on old wells. One or two wells each are drilling in such pools as Sour Lake, Batson and Humble.

In the Orange Pool, the Sun Oil Co.'s No. 1 Gunstream, a work over, responded with a flow of 2,000 bbls., 10 per cent water, at 4,140 feet. Its No. 3 Bellisle is a 50-bbl. pumper at 3,475 feet and No. 2 Brown, southeast of production, is showing oil and gas in a sand at 4,500 feet. The Kishi Development Co.'s No. 2 Smith-Foreman is bailing at 3,175 feet, as is the Mutual Oil Co.'s No. 7 Chesson at 4,110 feet. The Rycade Oil Co.'s No. 2-C State land is showing gas at 3,580 feet. The Orange Petroleum Co.'s No. 3 Berwick is a pumper at 3,425 feet and the Gulf Coast Oil Co.'s No. 3 Leon is pumping 5 bbls. at 3,350 feet, following a work over. One mile north and east of production, the American National Oil Co.'s No. 1 Winifree is bailing at 3,480 feet with 20 feet of screen set.

The Monarch Oil & Refining Co.'s No. 1 Mecom is drilling at 3,375 feet. The Supreme Oil Co.'s No. 1 Jackson is deepening at 3,700 feet. The Tullery Oil Co.'s No. 1 State land is below 3,700 feet. The Brownie Babbittee Oil Co.'s No. 1 McLean, an old hole, is deepening at 3,600 feet and the Atlantic Oil Producing Co.'s No. 1 is doing the same at 3,220 feet. The Orange Petroleum Co.'s No. 5 Chesson is idle at 2,975 feet. The Humble Oil & Refining Co.'s No. 20 Chesson is drilling around 3,875 feet and No. 8 Winifree fishing at 4,260 feet. On its State land lease on the banks of Cow Bayou, the Rycade Oil Co.'s No. 3-A is drilling at 2,910 feet. On the north side of the pool the Mutual Oil Co.'s No. 8 is deepening at 3,985 feet.

The Texas Co. and Vacuum Oil Co.'s joint No. 1 Hannah on the southwest side of the Hull Dome, 2,000 feet from production, is pumping 100 bbls. at 2,990 feet. On the northwest side, the Humble Oil & Refining Co.'s No. 5 Taylor is bailing at 2,075 feet and No. 1 is drilling below 4,100 feet. The Link Oil Co.'s No. 2 Peveito is pumping 175 bbls. at 3,200 feet, 10 per cent water. Same company's No. 4 Reviere is below 2,950 feet. The Yount-Lee Oil Co.'s No. 2 Taylor is now pumping 200 bbls. Last week it came in flowing 2,000 bbls. at 3,015 feet. A location has been made for No. 3 Taylor. The Empire Gas and Fuel Co. has a derrick up for No. 3 Lynd. The Hull Oil & Refining Co.'s No. 1 Lynch is idle at 3,350 feet. The Monarch Oil & Refining Co.'s No. 2 Miller is below 3,780 feet and No. 3 drilling at 3,435 feet. The Higgins Oil & Fuel Co.'s No. 2 Taylor is at 3,235 feet. The Mecom Oil Co. has a location for No. 6 Mecom, but is tied up on account of a dispute over the lease boundary. The company has installed a 30 horse power Reid engine on its lease. It was set up by Ralph Irwin of Oil City, Penn., who is now located at Shreveport for the Joseph Reid Gas Engine Co. On the north side of the dome, the Yount-Lee Oil Co.'s No. 5 Stengler is drilling below 3,000 feet and on the east side, the Republic Production Co.'s No. 6 Dolbear is deepening and No. 17 rigging to work over. No. 45 Dolbear, a work over, is pumping 150 bbls. of fluid, 50 bbls. water and sediment at 1,990 feet. Nos. 4 and 23 are also being worked over, while derricks are standing for Nos. 72 and 73, both new wells. Its No. 6 Dolbear is still flowing an average of 5,000 bbls. per day.

In the Goose Creek Pool, the Gulf Coast and Crown joint No. 38 Galliard bailed saltwater at 4,725 feet and No. 18 is being bailed after re-drilling. The Humble Oil & Refining Co.'s No. 45 Smith will make a 150-bbl. pumper at 2,800 feet. Over in Spillman Island, across the bay from the pool proper, the J. R. Copeland Oil Co.'s No. 2 is bailing at 4,680 feet.

The Gulf Production Co.'s No. 6 Chapman-Bryan at the mouth of Goose Creek, is drilling around 2,235 feet and No. 7 Tabb Fee is deepening at 3,345 feet. The Humble Oil & Refining Co.'s No. 52 Smith on the west side, is drilling below 1,890 feet and No. 10 Tabb at 2,785 feet.

In the West Columbia Pool, The Texas Co.'s No. 53 Hogg is bailing at 3,700 feet. It is an old well, redrilled. No. 52 is idle and No. 1 Abrams on the north side is being put on the beam, after having been cleared of the wash pipe and new screen set. The Humble Oil & Refining Co.'s No. 1 Robinson, north of the Abrams, is being worked-over at 2,735 feet.

The Humble Oil & Refining Co.'s No. 1 Smith at Damon Mound is fishing at 3,020 feet. H. H. Cullen's No. 3 Ward there is shut down, as is work undertaken by the Sinclair Oil & Gas Co.

In Other Pools

The Texas Co.'s No. 248 Fee at Sour Lake is pumping 20 bbls. at 1,510 feet and No. 272 fee is being redrilled at 2,000 feet. The Ada Bell Oil Co.'s No. 42 Paraffin in the Batson Pool is below 965 feet. Wilson & Broach's No. 6 Mississippi-Texas in the old Spindletop Pool is a 100-bbl. producer at 925 feet and the deep test of the Rycade Oil Co., off the dome, is drilling below 3,175 feet. Paggi Bros. No. 3 in the Saratoga Pool is drilling at 535 feet and Rio Bravo Oil Co.'s No. 104-B is below 1,100 feet and idle, waiting for cement to set around the casing. The Humble Oil & Refining Co.'s No. 3 B. & F. at Barber Hill was abandoned at 2,915 feet. Two tests started there have been shut down temporarily. The Rycade Oil Co.'s No. 1 Meyers in the Markham Pool is below 2,100 feet and Deering and associates have a derrick for No. 1 Myers.

In the Blue Ridge Pool, The Texas Co. has a location for No. 11 Robinson, 500 feet north and west from No. 10 Robinson. The Mutual Oil Co. also has a location for No. 1 Robinson. The same company's No. 1 Booth on the west side of the dome, is working over at 3,200 feet. At Pierce Junction, the Humble Oil & Refining Co.'s No. 3 Whitehead is drilling around 3,500 feet and No. 6 Fitzsimmons is bailing at 2,750 feet. Both are on the east side of the dome. One the north side, the Sun Oil Co.'s No. 1 Ritter is below 3,250 feet. The Texas Co. is drilling between the two pools.

South Louisiana

In the Vinton Pool, the Vinton Petroleum Co.'s No. 40 Gray is a 100-bbl. well and the Sun Oil Co.'s No. 1 Johnson a saltwater hole at 2,350 feet. The Texas Co.'s No. 22 Gray will make a

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News of Mexican Fields

By George Blardone

TAMPICO, Mexico, Oct. 19.—The only completion worth while in Mexican fields during the past few days is Venable and others' No. 2, Lot 1 (2-B), in the Cacalilao sector of the Panuco Field, which is reckoned good for 900 bbls. at 2,245 feet. The well flows by heads. The other completions were also in the Panuco Pool, and both were dry holes. The follow: Credito Petroleum Co., No. 19, Lot 1, Cacalilao, finished at 2,260 feet; and Transcontinental Petroleum Co.'s No. 27, Lot 4, same sector, which is a dry hole at 1,950 feet.

The final three days of last week witnessed nearly 8 inches of rainfall in the Tampico embayment, and extending to the Sierra Madra Mountains to the west. The result is high water in the Panuco River and impassable roads. The weather has not yet cleared and it is possible that the heavy rains, late in coming, will now hold until the end of the present month. Field operations are being much curtailed as a result.

Panuco-Cacalilao

Detailed drilling operations in the Cacalilao sector of the Panuco Pool during the past week are best described as follows: La Corona Petroleum Co.'s No. 41, Lot 4, drilling in shale at 380 feet; No. 42, same, drilling in the San Felipe at 1,470 feet; No. 38, same, drilling in a similar formation at 1,625 feet; Lot 1, No. 31, drilling in gray lime with the hole full of oil at 1,690 feet, and No. 43 has cemented 8-inch in the San Felipe at 1,220 feet. Kone & Willis' No. 3, Lot 1, Cacalilao, drilling in the San Felipe at 1,365 feet. Mexican Gulf Oil Co.'s No. 33, Lot 1, (4-C), is drilling in a brown and white limestone at 1,490 feet showing 200 bbls.; No. 35, same, drilling in a broken lime at 1,150 feet, and No. 37, same, drilling in a blue limestone at 1,080 feet. International Petroleum Co.'s No. 24, Lot 5, is drilling in a gray lime at 1,708 feet; No. 26, same, is showing some emulsion at 2,470 feet, in a brown limestone; No. 27, same, drilling in the San Felipe at 1,210 feet, and No. 40 drilling in gray shale at 475 feet. International is moving material for Nos. 29 and 30, which are located in Lot 3. Mexican Sinclair Petroleum Corp.'s No. 11, Lot 3, is shut down at 1,950 feet, in the Tamasopa; No. 27, same, is showing nicely for a well, the test making some 600 bbls. now as the drill descends in the San Felipe at 1,800 feet; No. 33, same, drilling in a similar formation at 1,307 feet, and No. 24, same, drilling in blue shale at 425 feet. Over in fraction 4-B, of Lot 1, Mexican Sinclair is moving material to three locations. Rich Mex Oil Co.'s operations in fraction 4,B, Lot 1, are as follows: No. 3 has cemented 8-inch at 1,125 feet in the San Felipe; No. 11 is drilling in the same formation at 1,635 feet; No. 16 drilling in shale at 300 feet; No. 20 drilling in the San Felipe at 1,565 feet; No. 22, drilling in limestone with a showing at 1,895 feet, and No. 24, spudding. Venable and others' No. 5-A, Lot 1, (2-B), is drilling in gray lime at 1,745 feet. Transcontinental Petroleum Co.'s operations in Lot 4 follow: No. 26, drilling in lime at 1,710 feet; No. 29, running 12½-inch at 600 feet; No. 31 has cemented 10-inch in the San Felipe at 1,275 feet; No. 32,

(Continued on Page 98)

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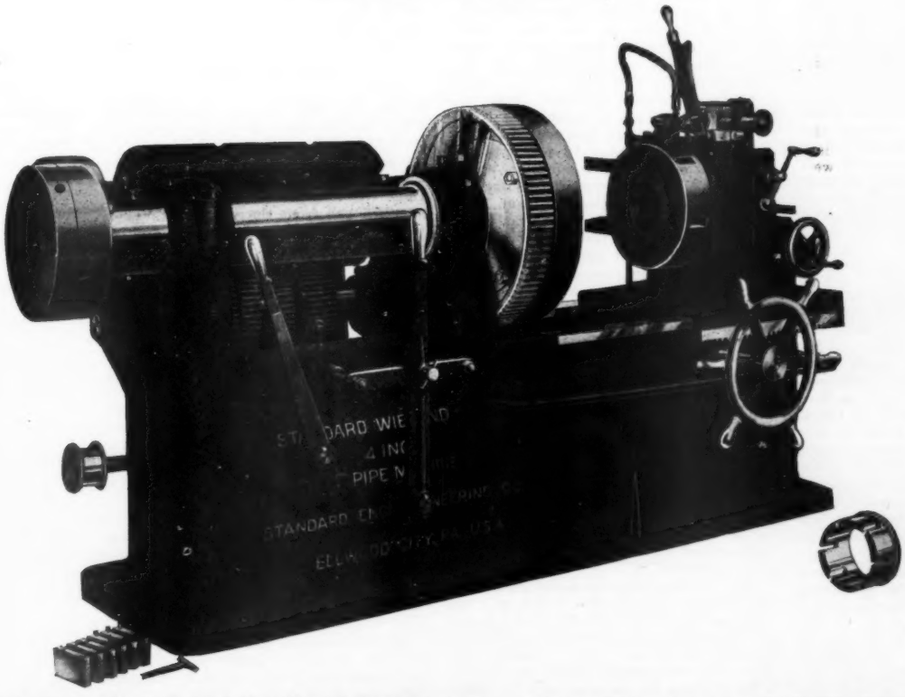

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Wyoming Field Operations

By F. B. Taylor

Wyoming Associated Co. gets 409-bbl. producer in first Wall Creek sand, Salt Creek, and one of 1,383 bbls. in second Wall Creek. Utah Oil & Refining Co.'s wildcat at Black Mountain looks like commercial well. Ohio Oil Co. may have discovery well on Rex Lake Dome.

CASPER, Wyo., Oct. 20.—During the recent test conducted in the Salt Creek Field by the Salt Creek Producers' Association, the Producers & Refiners Corp. held that its leases were treated in a way during the test that did not give a true test of the amount of production. As a result the Bureau of Mines is now conducting an impartial test of the Producers & Refiners leases to see whether the production was not as large as normal when the test of the whole field was made. The result will decide the amount of oil that is to be produced from the wells of the Producers & Refiners Corp. as 65 per cent of the total production of the lease. It is held by many operators that, in this instance, a normal 65 per cent prorata over the field would work a hardship on the Producers & Refiners properties for the leases of this firm are located well down on the structure and when the time comes that the water drive will start inward on the field, it will reach the Producers & Refiners' holdings first while the Midwest and other firms located well in the central part of the structure will be producing for several years longer because the water line will take that much more time to reach their holdings.

The Marine Oil Co. has cemented a string of 6⅝ casing at 2,490 feet on Section 5-39-78 in the Salt Creek Field and has cleaned out the hole to 2,744 feet. Another string of the same firm is drilling on Section 8-39-78 at about 700 feet in shale and the 12-inch pipe is set.

The Utah Oil & Refining Co.'s wildcat near Black Mountain, about 30 miles east of Thermopolis, has reached the Amsden sand above the Madison lime and has a showing for a commercial well of black oil. The location is in the foothills of the Big Horn Mountains and has been drilling since early last spring. The rig burned down and delayed the work somewhat last summer.

Salt Creek Producers

The Wyoming Associated Oil Co., operating in the Salt Creek Field, found a good producer that is making about 409 bbls. from 1,463 feet on Section 23-40-79 in the first Wall Creek sand. The same firm also brought in a producer good for 1,383 bbls. at 2,010 feet on Section 14-40-79 in the second Wall Creek sand. The Wyoming Associated is one of the Midwest subsidiaries.

Under the combined weight of a low market and the coming winter season, field work in the Rocky Mountain region is closing down in all directions; a few hardy operators are still endeavoring to start up new wildcat ventures on structure they consider worth while and some of the larger firms are also preparing to continue work on some important tests during the winter.

In the Big Muddy Field, there will be very little done. The Mutual Oil Co.'s subsidiary, the Hamilton Oil Co., which does the operating in the Big Muddy Field, expects to run that whole field with about 20 workers.

The assistance of the larger firms to the smaller operators in this region has gone a long way to bring about an amicable feeling between the large interests and the little fellows and this region is probably in closer harmony working towards the common end, than any other oil region in the country. At an unofficial gathering of several heads of oil firms operating, held in Casper a few days ago, it was the opinion that the larger companies were operating in this region to a better end than if the fields were more divided and operated by a large number of small firms. Even the more radical admitted that, given full control of a field in this region, one large oil company would produce the oil more economically and with less loss to the public than were the same field divided up into many tracts and operated by separate firms. One high official said, however, it was doubtful if the time would ever come when the business would be operated by large firms as a whole because of the need of the small operator to wildcat and search out the fields. He stated it would be best probably for the producing and refining and marketing to be handled under one directorate as great savings can be had in this way, but the wildcatter of small means is still a great factor because of his ability to search out productive spots and open new fields.

Rex Lake Well

The new well of the Ohio Oil Co., drilling on the Rex Lake Dome in Albany County, southern Wyoming, has finished getting out the bailer that was dropped last week and stopped the completion of the well for the time. Drilling is to be started again and it looks as though this well would be the discovery well of a new field.

The sand is now conceded to be the Muddy and the top was found at 3,754 feet; the bailer was dropped after the tools had drilled about 12 feet into the sand and the well was gassing and showing oil. While the crew was fishing for the bailer, the hole filled up about 1,000 feet and at last reports there was about 1,500 feet of oil in the hole and filling slowly. This would mean a back pressure of about 650 pounds to the square inch on the sand and as the hole continues to fill, it is considered certain that the well is in a productive formation of large area, for, were the strike only a sand lens, it would not have the pressure to raise a column of oil as high as is in the hole now.

The Marine Oil Co.'s well, drilling about 50 miles north of Riverton in Fremont County, is near the first Wall Creek sand and may be in this week. Due to washouts on the road, news from the well has been delayed and the last word to come through was that the 10-inch casing was set and found tight and that drilling had been resumed; the hole was then 2,300 feet.

This well is the second one drilled by this firm on the Shel'don Dome and the first well was a dry hole but had a showing in the first sand that was thought to warrant production near at hand. The first well was thought to be located on a fault plane in the sand and the present test is to prove the theory.

Clay Basin Wildcat

The Producers & Refiners will start drilling on the Clay Basin wildcat at once; three trucks of material went out of Rock Springs the past week, bound for the location which is about 60 miles south of that point. These trucks were loaded with a steel rig and other material at Casper and made the trip overland through Whisky Gap and then to Rawlins and Rock Springs. The trucks completed the trip to the location in about four days while if the same material had been sent around by rail through Cheyenne, it would have taken about a week to reach Rock Springs. The location for this wildcat is about 7 miles from the Colorado-Wyoming State line and much of the material for the well is to be sent from the Producers & Refiners camp at Baxter Basin.

In the Baxter Basin Field, the Associated Oil Co., drilling a well jointly with the Montacal Oil Co., on Section 23-17-104, is down 3,260 feet and is in a dark shale.

The Ohio Oil Co., on Section 22-16-104, had drilled out the cement set of the 10-inch pipe and found it tight. A small pocket of gas was found below the bottom of the casing and the bit is now in blue shale.

The Midwest Refining Co. is down 2,350 feet on Section 10-16-104 and the same firm is 2,650 feet on Section 11-16-104, and having some trouble with some lost pipe in the hole.

The Producers & Refiners are busy on one well on the school section, 36-17-104, and the other well is shut down; at the school section well the crew has a fishing job with a parted string of pipe in the hole.

Shelby Gas Rivalry

Gordon Campbell, the promoter who drilled the first well in the Sunburst Field in Montana, is in the limelight there again in a new controversy with the present gas supplying firm at Shelby town. This firm, a subsidiary of the Ohio Oil Co., has laid mains and has supplied gas from the wells in the field to Shelby for the past year or more and a short time ago, Campbell and associates circulated a petition for a franchise to sell gas and lay mains to carry same to Shelby. The Council granted the franchise and it now appears that Shelby is to have two sets of gas mains and two sources of supply.

The rates charged by the present firm supplying gas to the city is reported as the main cause of complaint. The present rate is cited at $1.10 per 1,000 feet, while Campbell and associates state they will charge from 45 to 55 cents per 1,000 or just half what the present company is charging.

The Illinois Pipe Line Co. has started work on an extension to its loading rack at Sunburst and also will put in more tankage at once. As it now stands the loading rack will handle seven cars, but when the improvements are complete, the rack will load 14 cars at once.

The Sweetgrass Oil Co.'s No. 2 McDonald, Section 4-34-2w, came in the past week and is making about 600 bbls. from the Ellis sand at 1,490 feet. The flow is going into storage at the well because there is no room in the pipe line.

The Empire of Montana Oil Co. drilled in a well good for 40 bbls. on Section 25-35-2w, in the Ellis sand, at 1,490 feet and found the sand quite hard and close; it is expected that a shot will help this well materially.

McCarthy & West, drilling on Section 3-34-2w, also found a producer good for 40 bbls. in the Ellis sand at 1,500 feet and the well is shut in until the pipe line congestion clears up. At present there is about 250,000 bbls. in tanks on top of the ground in the Sunburst Field and at the town of Sunburst where the pipe line ends at the railroad.

Osage Cut

Osage received another cut of 15 cents, bringing the price to $1.20 per bbl. or the same as the Lance Creek crude. It appears that Osage crude was to have been reduced at the general cutting of crude prices, to the same as Lance Creek or $1.20, but through some slip, the Osage oil was cut only the same as several other high grade oils and this left it at $1.35 while Lance Creek went to $1.20. A checking up in the price reductions recently brought out the error and the reduction was ordered in consequence today.

The Osage Field has a production of about 1,000 bbls. daily and this is also about the potential figure. Southeast of the Osage Field about 40 miles is the Mule Creek Field which is at present shut in. The Mule Creek Field has a production of about 500 bbls. daily with a potential production of 800 bbls. daily. This latter field is controlled by the Ohio Oil Co. and the Western States. However, should the Osage plants require a larger supply of crude than they can obtain from the Osage Field, the Mule Creek oil could be had in a short rail haul. There are several small operations also within comparatively short reach of Osage which would give a limited amount of both light and heavy crudes.

Montana

The Yale Oil & Refining Co., with a plant at Miles City, Mont., has contracted with the Fifty Six Oil Co., one of the independent producers of the Cat Creek Field, for the Fifty Six's production, amounting to about 600 bbls. daily.

The oil will be sent through the pipe line to Winnett and then by rail to Miles City, where the refinery is located. The Weowna refinery at Winnett, the Lewistown and Arro plants at Lewistown and the Round Up Refining Co. at that city and the Miles City Refining Co. at Miles City are all taking crude from the Cat Creek Field to run their plants. The bulk of production, however, is handled by the Mutual Oil Co., and is sent to the refineries of the Standard of Indiana, the Mutual's own plants and over into Canada where the Imperial Oil Co. has a refinery at Regina.

The citizens of eastern Fergus County, where the Cat Creek Field is located, have petitioned for a separation of the County into two parts, the eastern part to be known as Petroleum County. The people of Winnett and vicinity claim that the western part of the county, which contains the larger towns and most of the inhabitants, also the county seat, has discriminated against the eastern part in the matter of roads and other things, though the oil fields of eastern Fergus County are a source of great revenue to the county and the money derived therefrom is used mainly to enrich the western part of the county.

In the western part of the Cat Creek area, the Peerless Oil Co. is drilling on Section 9-15-27, several miles west of any development, is down 560 feet and making hole. This is a wildcat that hopes to extend the field by another pool as did the Devereaux well last summer. The Republic Oil Co.'s well on Brush Creek is down waiting on a string of 5⅛-inch casing.

On the extreme northwest end of the Cat Creek structure, on Section 1-15-28, the Custer Oil & Gas Co. is close to the top of the second sand and should be in within a few days. This well is another attempt to extend the field to the west and so far the well has shown that the formations have run regular and the operators hope for a good producer before bad weather sets in.

The Mutual Oil Co. is now at work on

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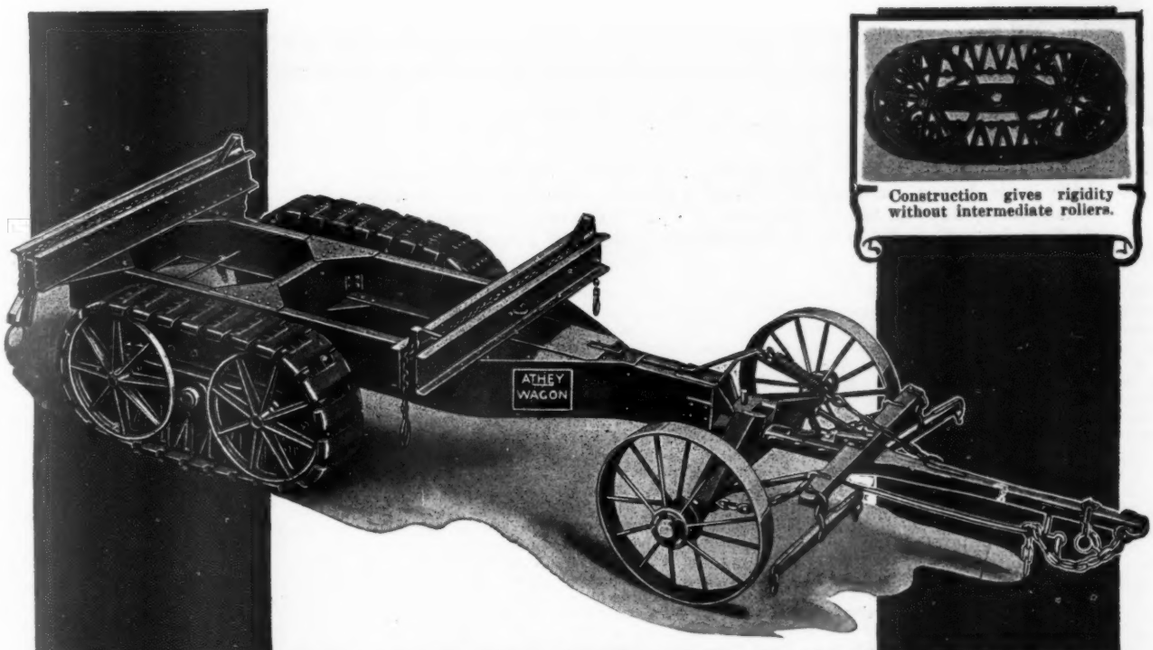

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IT BRIDGES THE SOFT SPOTS

West Kentucky-Tennessee

By Vern T. Whitney

E. M. Treat & Co.'s No. 1 Sam Riddle, near Modoc, Cumberland County, drills itself deeper and making a barrel a minute. Extends field 10 miles. Oklahoma parties find 500-bbl. producer in Pickett County, Tennessee. Morris Petroleum Co.'s No. 5 A. A. Huddleston, makes 100 bbls. naturally.

BOWLING GREEN, Ky., Oct. 22.—The outstanding topic of conversation among operators in the Kentucky fields the past week, is the sensational completion by E. M. Treat & Co. on the Sam Riddle farm, near Modoc postoffice in Cumberland County. The test was located on the ridge between Bear Creek and Ill Will Creek.

As previously reported, the sand was found from 1,019 to 1,032 feet, 80 feet below the Pencil Cave. W. P. Simmons, of Treat & Co., whose experience and unquestioned ability in oil production is well known, superintended the work and identified the sand to be in the Trenton formation, known locally as the "Modoc Sand."

This well was first reported at 50 bbls. and last week as having produced 200 bbls. in 13 hours. Since that time, according to Mr. Simmons, the well seems to be flowing with greater force, leading him to believe that it is drilling itself further in the sand. A test on Monday showed 250 bbls. in five hours, and at the present writing it is making a barrel a minute when opened. In addition to 1,250 bbls. storage now on the property, Simmons is planning to erect an additional 2,000 bbls. storage, awaiting the completion of the Paragon line, which will be completed within the next 10 days.

The great importance of this well lies in the fact that it is considered to be in a true Trenton sand. Furthermore, it extends the field limits about 10 miles. The Trenton was also found on the Huddleston farm at Sulphur Creek, and on Judio Creek, which forms a great triangle. Several other wells drilled years ago showed oil in this horizon.

The discovery of this highly productive sand is undoubtedly one of the most important features shown up to the present time in the entire western Kentucky district, and will be the cause of a heavy drilling campaign.

The completion of the new pipe line of the Paragon Development Co. will afford an outlet for this crude, which tests 44 gravity, and commands the Somerset Light price. Further, the comparatively shallow depth, from 750 to 1,050 feet, will mean low cost of development and equipment. Steady drilling will be done during the winter, and the coming of spring will probably see one of the busiest drilling campaigns ever conducted in the State.

Producer in Pickett County, Tenn.

It is extremely probable that this producing horizon extends over the State line into Tennessee, as in addition to the recent completion at Willow Grove, in Clay County, Tennessee, reliable reports show that a big well has just been finished, by Oklahoma parties, in northwestern portion of Pickett County, near the junction of Clinton and Cumberland Counties in Kentucky. This well is said to have been completed at approximately 1,200 feet, in what has been identified as the Trenton sand, and is reported good for 500 bbls.

It may be remembered that years ago the Cumberland Pipe Line Co. had a gathering system in this county, which was running oil from the Spurrier-Riverton Field, where 17 wells were producing, but owing to low market and heavy taxation by the State, this line was pulled out. Since that time, however, the State of Tennessee has abolished this tax and at present is making every effort to aid oil production.

Warren County Development

Warren County showed six completions for the week, with five producers and one dry hole. Three of the producers were completed by the Ohio Fuel Oil Co., on its Waller-Runner extension acreage. No. 2 Kelly-Miller is pumping 6 bbls. at 1,223 feet; No. 4 Garrett is making 12 bbls. on jack at 1,196 feet. Sand from 1,185 to 1,190 feet was given a 40-quart shot. No. 13 W. A. Gott 100 acres is good for 2 bbls. on jack at 1,008 feet. Sand from 990 to 1,000 feet was given a 40-quart jar.

In the Richardsville area, the Farmers Oil & Gas Co.'s No. 1 Hill is dry at 1,710 feet. The hole was plugged back to about 1,391 feet and given a shot with no results.

In the Davenport Pool, McMullin and others got a 12-bbl. pumper in No. 5 A. Colburn at 1,096 feet. In the Rockfield section, Phillips & Co.'s No. 1 W. A. Bryant is making 3 bbls. after shot at 517 feet.

Drilling Operations

In the Davenport Pool, M. B. Williams is drilling at 610 feet in his No. 3 Hobson heirs; Nottulyn Oil Syndicate's No. 3 Willoughby Lane at 300 feet.

Waller-Runner Pool—Plantation Consolidated Oil Co.'s No. 7 W. A. Gott 100 acres, is making hole at 900 feet. No. 8 on same lease is drilling at 467 feet. J. J. Fort is preparing to shoot No. 1 on the Slaughter; E. M. Treat & Co., spudding No. 2 Sebe Smith 40 acres.

Sandidge District—Bannon & Stewart are down 345 feet in No. 2 A. Shields; G. W. Pyle's No. 1 Watkins drilling at 570 feet; Foster & Co.'s No. 2 Dr. C. E. Francis making ready for shot; Makeever Bros. No. 4 Young rigging to pump.

Browning-Rockfield Section—Wilde & Co.'s No. 1 G. Smith making hole at 640 feet, casing was set at 260 feet; Loman & Bowling's No. 2 B. Price is drilling at 987 feet, casing set at 300 feet. C. L. Turner is shut down at 200 feet in No. 3 McLemore; Mountain State Oil Co.'s No. 9 Kelley, drilling at 342 feet.

Owensboro Field

Four completions for the week in review, all producers, marked the development in the Pellville section of the Hancock-Ohio-Daviess County oil fields, increasing the daily production of the Owensboro Field about 20 bbls. per day. Dry weather which has prevailed for the past three weeks is in a measure hindering the work of development, which at present shows more activity than at any time since late last summer. The scarcity of water is greater than at any time during the summer, and several rigs are shut down to wait for a rain.

Most of the activity is centered in the extension territory southeast of Pellville and three of the four completed wells are in that area. The Dearborn Oil Co., of Chicago, drilling on the Abe Howe lease in the Hurricane section, has a 3-bbl. pumper at 714 feet. This well is north of the Newton Oil Co.'s well on the Lafe Payne farm and east of the Helm well, finished up by the Leeper Oil Co. It is the first of a half a dozen wells being drilled on this farm this fall.

Well on Miller Farm

Damron Bros. on the Bob Miller farm at Habit School house, have what is believed to be one of the best wells drilled in the Barlow sand. Completed at a depth of 717 feet the well was shot in 20 feet of pay sand. It showed quite a large quantity of free oil before shot with 60 quarts. The shot bridged the hole, and it was with considerable difficulty the operators reset the casing. The bridge was drilled out late in the week and cleaning out was in progress. It is estimated that it will make around 20 bbls.

Well in Jett Sand

Two locations from the Damron well, C. E. Daugherty & Co., on the Virgil Miller farm adjoining, has a very nice well in the Jett sand. The well finished up at 500 feet with 30 feet of sand, about 20 feet of which was pay, and after standing two days waiting for a shot it filled up 200 feet. Drillers were cleaning out Saturday and it is thought this well will produce at least 10 bbls.

In the Pellville section, Boop & McDonough have a 1-bbl. pumper in No. 2 C. Tabor Johnston farm in the Jett sand. It is the lightest well of the quartet completed last week. Thompson, Kiser & Johnston on the Ed Baize farm, have a dry hole in the Jett sand in No. 2 well, but will drill on down to the Barlow formation as soon as an abundant water supply is secured.

The Pellville Oil Co. on the Brown lease is 500 feet and drilling. This property is located in the Pellville Pool.

The Chicago Petroleum Syndicate on the Taylor lease, at Maceo, is drilling at 750 feet. Eight-inch casing was set at this point to prevent the hole caving and drilling will continue to 1,000 feet. It is expected, according to geological calculation, that the Barlow sand will be encountered between 950 and 1,000 feet.

Cumberland-Monroe Counties

The feature completion for the week in the Cumberland-Monroe County Field is the No. 5 A. A. Huddleston, of the Morris Petroleum Co. It is good for 100 bbls. naturally, at 80 feet below the Pencil Cave, encountered at 605 feet. This sand has been identified as Trenton. This makes four producers for this company in the Sulphur Creek district. In this same section No. 3 J. B. Riddle of Hook, Ross and Wise, is dry in the first Sunnybrook at 300 feet. The Kanawha Oil Co. is drilling at 1,250 feet on the Williams farm; the Seaboard Oil Co. finished its No. 1 C. E. Groce at 1,950 feet and is awaiting shot.

At Kettle Creek, No. 2 Kim Crawford of Pederson and others, was drilled a foot deeper in the sand and is reported as making 150 bbls. The Atlantic Oil Producing Co. is getting ready to start an offset to this Crawford well.

C. P. Taneyhill is drilling at 1,175 feet on his No. 1 A. Williams, 9 miles north of Tompkinsville, in Monroe County. Black shale was found at 150 to 176 feet and the Pencil Cave at 965 feet, which shows a difference of about 226 feet between the bottom of the shale and Pencil Cave at this location, which is in the northeastern part of the country, and Kettle Creek Pool in the southeastern part of the county.

Graf & Siggins have abandoned No. 1 on the G. P. Turner lease, in the southwestern part of the country, at 885 feet. Shale was found from 71 to 96 feet and the Pencil Cave at 810 feet. Gas was encountered at 325 feet.

The Louisville Gas & Electric Co. has moved a machine to a location on the J. C. Wood farm on the waters of Mill

(Continued on Page 81)

News from Fields of Canada

By Victor Lauriston

CHATHAM, Ont., Oct. 22.—In Sweetgrass district, southern Alberta, drilling, outside the Canadian Oil & Refining (Rogers) well on Section 29-11-1w4, is practically at a standstill. Most of the companies with unfinished tests on the Quarantine Reserve, Township 15-1w4, are interested in negotiations now under way to pool their resources and carry a single unfinished test, probably the Lethbridge Oils (Baalim) well to a conclusive depth. The Baalim well is on Section 12-1-15w4, down 2,030 feet, and in good shape for deeper drilling.

On the Montana side, the Spartan Oil Co. test to the west of the field failed to come in at the depth expected, fresh water being met instead of oil. Some gas was encountered at 2,200 feet. The well has resumed drilling as a test of the deeper formations. The Griffith well, a half mile west of the Spartan-McAlpine, is shut down, after encountering sulphur water. The Mountain Chief Oil Co. is down 400 feet on No. 4 test near Browning, south of Cardston, and has struck a little gas. The Standard Refining Co. plant at Lethbridge, Alta., is waiting for additional equipment, but is expected to be complete and in operation by November 15.

In northern Alberta, the newly-organized Keystone Oil Co. is reported arranging for a test at a point downstream from Peace River town. Opposite Peace River town, the Victory-Albertas well is down 1,500 feet and capped. Apparently the hole is full of water, with considerable gas coming through, and the possible gas flow is estimated at 10,000,000 feet a day. The gas is claimed to be a wet gas, with one gallon of gasoline to 1,000 feet. Work is being started to shut off the water. The H. L. Williams test, some miles down stream from the Keystone location, is running double tower and getting ready to put in 4½-inch casing.

At Waterways, in the Athabaska district, the Alberta provincial government salt drilling, to test for the productive formation previously encountered at McMurray, has got the granite at 770 feet. A third test will likely be started midway between the two points.

In southern Alberta, the production of the Prairie Natural Gas Co. at Craigmyle, near Delia, has been tested by R. E. Ellsworth of the department of mines for carbon gas production.

The new Imperial Oil, Ltd. refinery at Calgary is near completion and will probably make its first run early in November. The plant will likely operate on a mixture of higher grade Salt Creek

(Continued on Page 99)

Kelly & Jones
CAST STEEL GATE VALVES
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Fig. 1200

Cast Steel Gate Valve for 350 lbs. Superheated Steam Pressure and a temperature of 800° F.

A dependable straightway valve admirably suited for high temperature cracking processes. Can be furnished for all working pressures and for temperatures up to 800 degrees.

All castings are made of Electric Steel in our own steel foundry—free from sand holes and shrink holes, and the quality and strength are therefore absolutely guaranteed.

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Cause of Surplus; Why it Cannot Last

Analysis of Oil Situation by H. G. James Before New York State Oil Producers Asociation at Wellsville, N Y.

By H. G. James

In my judgment there is no general panacea to correct the evils of the oil industry.

Certain readjustments might bring a measure of improvement, but because of the highly speculative character of finding and producing oil and the tremendous financial and mental gulf existing between the producing, manufacturing and marketing ends of the business, there must always be, by the very nature of things, rapidly fluctuating periods of prosperity and depression.

Thousands of men without mental training or business experience, by the

H. G. James

fortunes of fate, become oil producers. They are the ones who take all the chances. They are gamblers by nature. The trained business men with financial resources and keen insight become the manufacturers of the raw products of the gamblers and the speculators.

The Balance of Power

Again, the man with no, or limited capital, protected by guaranteed margins of profit, becomes the distributor and marketer of the manufactured product to such an extent he becomes the "balance of power." Inexperienced, he knows not how to conduct his business, either in periods of prosperity or times of adversity, along lines of economic procedure.

The producer, heedlessly and thoughtlessly, in his effort, creates, when opportunity is afforded, overproduction. In periods of prosperity his profit is large. Prices go down, and he is financially prostrated. Demand comes for his product, and not until it becomes insistent and the producer can command new capital by reasons of the assurance of large returns upon his investment in the event he finds oil, does the search for new fields again become active. Thus is obvious the necessity of the producer's ability to make large speculative profits.

Manufacturer Helpless

On the other hand, that faction of the marketing division of petroleum products which occupies the position of "balance of power," inexperienced, without foresight, fails, when profits are good, to create a cash reserve to carry him over periods of depression. He does not create adequate storage to lay in supplies, when prices are low, to lengthen out his finances when prices are high. Like the producer, he is a feeding element.

FACTORS IN THE OIL PROBLEM

The producer, heedlessly and thoughtlessly, in his effort, creates overproduction. In periods of prosperity his profit is large. Prices go down, and he is financially prostrated. Demand comes for his product, and, not until it becomes insistent, and the producer can command new capital by reason of assurance of large returns upon his investment if he finds oil, does the search for new fields again become active.

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Between these two the manufacturer with no control over the price of his raw product and unable to fix the retail price of his finished product, sits largely helpless with tremendous investment and the responsibility of holding the same intact.

Between these two, the manufacturer, with no control over the price of his raw product and unable to fix the retail price of his finished product, sits largely helpless, with tremendous investment and the responsibility of holding intact, the same.

He who produces, transports, manufactures and markets his own products occupies the safest position, and, by reason of all intermediate profits, is able to get by when the producer, the manufacturer or the marketer singly perishes in periods of fluctuation.

One of the greatest difficulties in an intelligent individual operation of the oil industry is the absence of immediate, complete and comprehensive petroleum statistics. Conditions change so rapidly in oil that Governmental reports are practically worthless when finally issued and are so lacking in interpretation they cannot be used as guides, but serve mostly as history. Practically the only statistics produced today come from interested sources through the channels of large organizations. It is not to be expected that big companies are going to digest, interpret and suggest the use of these reports to competitors on the outside world.

Need for Statistics

These big organizations have their statisticians, their economists and their practical operators. These receive daily reports from all over the oil world. Such reports are studied from their various angles and advantage taken of them accordingly. Small operators without this information, proceed unintelligently, often against the intelligent action of the superior forces of petroleum.

Yet with all this information, because of the erratic, fluctuating character of the oil business, even the greatest and best informed often guess wrong.

There is no such thing as fixed production. In most lines of business it is possible to predicate action upon more or less fixed sources of raw products. It is impossible to tell what an oil well will do. Oil wells are as fickle as the zephyrs of spring time.

Ever since the war, oil men have been misguessing coming events in petroleum. The biggest men in the industry have been mistaken. Predictions were freely made of oil shortage because of tremendous increase in oil consumption.

But because of assurances of a market at good prices, prospectors went into the highways and byways of the earth searching for the liquid gold. They found it. They developed it in quantities never before dreamed of.

But these increased supplies of oil would not have supplied the demand except for three things:

(1) Better quality crude oil by reason of deeper drilling.

(2) Increased recoveries of gasoline from crude through improved distillation.

(3) The creating of additional gasoline supply through compression of casing head gasoline and absorption processes.

Cause of Present Condition

Multiplication of automobiles and general increase in consumption, by displacement of coal, indicated a consumption of gasoline in 1923 in excess of supply. Refinery shipments in January of this year were the greatest in history in winter periods. Producers and refiners bent every effort to increase output. Drilling was prosecuted practically everywhere. Refiners increased the capacity of their plants and installed every modern method of increased recovery by cracking process and otherwise.

Then several things happened:

Followed several months of stormy weather which curtailed the use of automobiles and the consumption, thereby, of gasoline.

Seven great gusher pools, most of them of the high quality oil, were developed simultaneously. Never in the history of the world were so many big wells in so many different sections of the country drilled at the same time. And never in the history of the world did wells of high grade oil hold up so tenaciously.

Believing weather conditions would improve and consumption would soon take care of the situation, refiners continued to run their plants at high speed, and placed their surplus in storage.

Stress Became Acute

Unable to sell their products under these conditions, by May, practically 50 per cent of the refineries in the Mid-Continent Field were shut down. Then the stress began to become acute, and refiners, compelled to move their goods in order to pay for crude, began cutting prices.

During the past two or three years there has been a great movement all over the country, on the part of big refiners to acquire their own marketing facilities. To this end they have built bulk distributing and service stations at every point of advantage throughout the land. They have purchased, and otherwise absorbed, practically all of the larger and more desirable marketing concerns.

Thus we find this condition existing: Fully 75 per cent of the gasoline volume of the country passing directly from the larger refineries to the public through their own marketing facilities.

The price received from the public for this gasoline represented only a fair margin of profit to the subsidiary, producing, transporting, manufacturing and marketing concerns. There was no excessive profit anywhere. There was only what we would consider a healthy profit to guarantee the consuming public a future supply.

Gasoline and Crude

In support of my contention that the price of gasoline has not been unfair to the public under conditions existing the past year, permit me to call to your attention the fact that during the year of 1912, when crude oil was 80c a bbl., the Chicago tank wagon price was 14.5c per gallon. Until recent cuts, the average price of crude oil used by the Mid-Continent refiner, was $1.87 a bbl. In 1915, when Cushing was at its flood and crude sold as low as 26c a bbl., the Chicago tank wagon price was 10.5c a gallon. In 1916, when crude oil was $1.25 a bbl., the Chicago tank wagon price was 17.5c a gallon. The Chicago tank wagon price at the present time is 13.4c a gallon.

In 1916, with crude oil $1.25 a bbl. and gasoline 17.5c a gallon, the Federal Trade Commission made an exhaustive investigation of the oil industry and reported to Congress that prices to the public had not increased in ratio to increased cost of producing gasoline.

Today, oil is produced from wells two to three times as deep as those of 1916. In refineries, it requires three men to do what two men used to do. Everything in the cost of producing gasoline is far higher than in 1916.

Must Carry the Burden

An important point to consider was brought out recently when a representative of the Standard Oil Co. said that in spite of the present low price of gasoline, his company, by reason of sales of other petroleum products, was not, on the whole, losing money. In this respect, the larger operator can get by and possibly make a prifit when the small operator cannot continue to exist.

All crude oil varies in intrinsic value. The average cost of refining varies in all refineries. The sale price of gasoline is predicted upon the cost of manufacturing and the price that can be obtained from the sale of other products of petroleum. There are substitutes for kerosene and for lubricating oil, for fuel oil, etc., but there is no substitute for gasoline, and gasoline must carry the burden. Under these circumstances, it is practically impossible to determine and fix the cost of producing a gallon of gasoline.

On the other hand, probably less than 25 per cent of the gasoline output was what has become generally known as "distress" gasoline. Manufacturers, more or less frantic, pressed by their creditors, depressed their prices, in order to meet obligations, to the point of general loss.

Service Station Orgy

It must be kept in mind, now, that 75 per cent of the gasoline output going directly from manufacturer to the public through his own service stations was selling on a basis of cost plus. This was the market. Hundreds of men, witnessing the wide margin of profit between that price and the price at which they could buy "distress" gasoline, began dotting the country with service stations. There was a veritable orgy of service station construction.

To fully appreciate the seriousness of

The REID Two Eccentric Geared Power

For heavy loads and hard service where steady operation is essential, the **REID TWO ECCENTRIC GEARED POWER** illustrated here will prove very satisfactory. Twenty-two years successful use has demonstrated this fact.

The frame arm located between the two eccentrics strengthens the shaft against bending, a feature not provided on powers with both eccentrics located above the frame.

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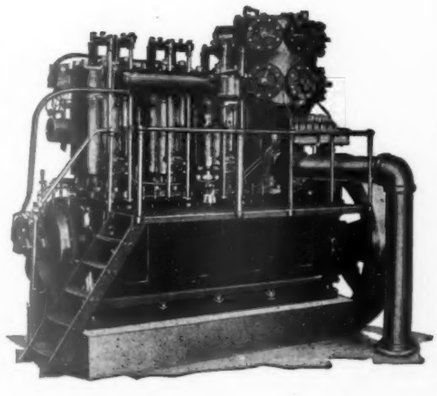
The Reeves Vertical Gas Engine—Compressors For Gas Booster Plants



Engine Sizes:
40 H. P. up to 250 H. P.

Engine-Compressor Sizes:
60 H. P. up to 160 H. P.

A few of the reasons why leading companies and engineers are purchasing the Reeves Gas Engines and Compressors.

They know the Reeves unit is not an experiment, having proven its reliability and worth over a period of about twenty years successful service.

Account of the simplicity of operation; low fuel and maintenance cost per horse power. One user just reported having operated last four units 16 months without shutdown.

All Compressors equipped with "Hope" Biplane, Patented, easy operating, high speed Valves.

Saving in installation time partly pays for unit.

Saving in plant construction cost from 20 to 50%, depending on location.

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Consulting and Contracting Engineers in Natural Gas and Oil

this situation, it must be understood that practically all of the established marketing concerns which had not sold out to refining companies had contracted for their supplies over 1923 on a basis of from 4 to 5 cents under the established tank wagon, or market price.

A mental condition soon developed which became the worst feature of the entire situation. These men with marginal contracts saw inexperienced persons, tank wagon drivers, farmers, merchants and even ministers, putting in pumps, buying cheap "distress gasoline," underselling the established market and taking away from them the business they had spent years in building up. They became restless and, out of their restlessness grew agitation.

Marginal Contract Protest

These men began demanding one of two things: Either that refiners get together and by some magic advance the price of "distress gasoline" on a correct basis with tank wagon and marginal contracts and cost to produce, or else reduce the tank wagon price so that the wide spread would not exist creating an invitation to disturbing competition.

The refiner producing the 75 per cent of gasoline possessed no control over the refiner producing the 25 per cent of "distress" gasoline." He was compelled to sell whatever gasoline he had in excess of his own requirements at the price created by the refiner without marketing facilities. He was helpless to raise the tank car, or wholesale, price.

At the same time it was contended it would be ruinous to attempt to reduce the tank wagon price. It meant a manufacturing loss to the refiners of the 75 per cent referred to.

Meetings were held; jobbers, harrowed by the vision of vanishing business, uttered excessive statements to win their point. They claimed the public was being robbed. Newspapers and politicians took up the refrain. It was the opportunity of the office seeker. Threatened State and Federal action, investigation and criticism finally resulted in a slashing in prices.

Today the whole industry, except the jobber, to a large extent is financially prostrated. As far as possible, everything in oil is at a standstill. Millions of dollars are being lost.

Jobber Gets Profit

The independent jobber has been getting his legitimate profit plus the independent refiner's profit, plus the independent refiner's loss, and not understanding this fact, the public has been misled. It is this apparent excess profit which has caused all the present furor.

The whole situation is a result of a lack of coordination and cooperation. And in the end the greatest sufferer will probably be the public. For the most part the public should understand that the jobber's margin of profit is guaranteed by the refiner and his clamor for a reduction in price could safely be made regardless of the effect upon the producer or refiner, because his income was not affected thereby, guaranteed as it is by a fixed margin between his buying price and his selling price, freight paid by the refiner.

It is impossible for any outside person to judge the merits of the petroleum situation without fully understanding and appreciating these inner angles of the industry.

The Public's Concern

The public's chief concern is in an adequate supply of crude petroleum and the products thereof. Its second consideration is the price. The public is always fair when it knows conditions. Every man, instinctively, as a matter of self protection, concedes the right of the other fellow to a fair profit and a fair profit means a margin which will carry any industry over varying periods. The contention is made that oil products have always sold at a fair price to the public and that the public has never been gouged.

It is also recognized in oildom that as fields grow older and wells decline in output, a higher price is necessary than in new, flush fields. The security of the petroleum industry, the safeguard of the consuming public, is dependent upon protection of the small, stripped oil producing wells of the country.

Thus we find eastern crude oil prices, near to the great markets, higher than prices in new western fields. There is not the intrinsic difference in value of the oil.

Influences of Transportation Costs

Probably no other one thing affects so seriously the oil industry so much as that of transportation.

In the first years of the present century the Mid-Continent oil field had its real beginning. By the close of 1903, when the price of Kansas crude oil was $1.38 a bbl., an overproduction developed. There was then only one refinery in what is known as the Mid-Continent Field. There were no pipe lines, and railroad facilities were inadequate. Producers were asked to stop drilling. Their reply was the world needed their product, and they went on. The price of crude oil began to sag and continued going down until it reached a posted price of 40 cents a bbl., and sold freely around 25 cents a bbl. As refineries were constructed, and pipe lines were built to the outside world, conditions in the Mid-Continent Field improved.

The internal combustion engine created a tremendous demand for petroleum products. The users of oil increased. The Osage, Cherokee, Glenn Pool, Cushing, came in, had their day and became history. In the meantime, refinery capacity increased 100 per cent in excess of both crude oil production and refined oil consumption. The Mid-Continent Field became the source of 60 per cent of the gasoline supply of America. Its position seemed permanent and secure.

Then the Unexpected

About this time Texas, Arkansas, California and Wyoming became vital factors in the petroleum situation. Tremendous production in these States was created. The enormous investment in refinery and pipe line facilities of the Mid-Continent Field became threatened. Transportation rates are largely responsible for conditions in Kansas and Oklahoma today.

Gasoline, by reason of advantageous freight rates, is passing by train loads from Wyoming directly through the entire Mid-Continent Field to Gulf ports on its way to Europe. Crude oil and gasoline from California are shipped by water to Gulf ports, then north through the Mid-Continent Field into the erstwhile territory of the Mid-Continent refiner at prices which the Mid-Continent refiner cannot meet and continue to exist.

Thus while Gulf refineries are operating at full blast on California crude and while refineries continue to multiply in Wyoming, Kansas and Oklahoma refineries are in the slough of despond.

Until comparatively recently, the Kansas refiner was protected with a freight differential of from 2 cents to 6 cents over the Oklahoma refiner. The Oklahoma refiner was protected with a freight differential over the Texas refiner of 10 to 12 cents per hundred. The Texas refiner had the advantage of export rates and rates to the Southwest. Today there is no differential between Kansas and Oklahoma. The differential between Texas and Oklahoma has been largely removed. Rates to the East are out of joint. It is almost impossible for Kansas and Oklahoma refiners to ship into Rocky Mountain regions.

Spread of Refineries

Bearing these facts in mind, you will note what has taken place:

Great refineries have been built on the Pacific Coast, along the Gulf and all the way up the Atlantic Coast to Boston. A chain of refineries of every known modern facility has been built across the entire length of Canada. At all the principal transportation and marketing centers of the United States other big refineries b ythe dominating factors of the industry, not necessarily the Standard Oil Co., have been established in the United States.

Down in the heart of America, the petroleum safeguard of the nation, lies, hemmed in, the Mid-Continent Field.

As already indicated, unfavorable transportation rates are the main factor in the cheap tank car price of gasoline of the Mid-Continent Field. These prices must ultimately mean the bankruptcy of every refiner. These Gulf port refiners are in a position to obtain cheap crude from Mexico and California and invade the erstwhile territory of Group 3, compelling Mid-Continent refiners to meet the ruinous competition.

Tanker Rates

Tanker rate on crude oil and gasoline from California to Atlantic ports is 90 cents a barrel. Posted price of crude in California is 98 cents to $1.01 a bbl., but large quantities are sold at much lower prices.

Freight rates from Galveston, Tex., to Cedar Rapids, Iowa, 2.41 cents per gallon; from Kansas and Oklahoma, 2.24 cents per gallon.

Freight rates from Beaumont, Tex., to St. Paul, Minn., 3 cents per gallon; from Kansas and Oklahoma, 2.84 cents per gallon.

Freight rates from New Orleans, La., to Milwaukee, Wis., 2.74 cents per gallon; from Group 3, 2,61 cents per gallon.

Freight rates from Beaumont, Tex., to Cincinnati, Ohio, 3.63 cents per gallon; from Group 3, 3.40 cents per gallon.

Freight rates from Casper, Wyo., to Green Bay, Wis., 3.37 cents per gallon; from Group 3, 2.94 cents per gallon.

From these figures it will be seen how impossible it is for Mid-Continent refiners to compete against cheap oil from California and Mexico.

Carrying charges on crude oil from Mid-Continent Fields to Atlantic seaports by pipe line are 76.75 cents per bbl., and 72 cents per hundred by rail, against 90 cents a barrel from California.

Freight rates on gasoline from Sasper to Gulf ports is 46.25 cents per hundred pounds; from Mid-Continent to Gulf ports 22 to 24.5 cents per houndred pounds, depending upon point of origin and route. Gasoline carrying charge from the Gulf to Chicago is 38.5 per hundred pounds.

Example

	Cents Per Gal.
Refinery price California gasoline..	5
Tanker rate California to gulf.....	2.1
Freight from gulf to Columbus Neb.	3.1
Total	10.2
Tank wagon at Columbus, Neb.....	1.3
Mid-Continent gasoline refinery price	7.25
Freight to Columbus, Neb.....	2.61
Total	9.86

What the Figures Show

From 1916 to 1922, inclusive, consumption of crude oil exceeded domestic production by 337,111,525 bbls., or a yearly average of 48,144,305.

It is maintained this country, when called upon, will be able to produce all the oil this country will need. Crude oil comes into this country free of duty.

Imports during the seven years above referred to ranged from 17,831,842 bbls. in 1916, the lowest amount, to a peak of 87,603,000 bbls. in 1920.

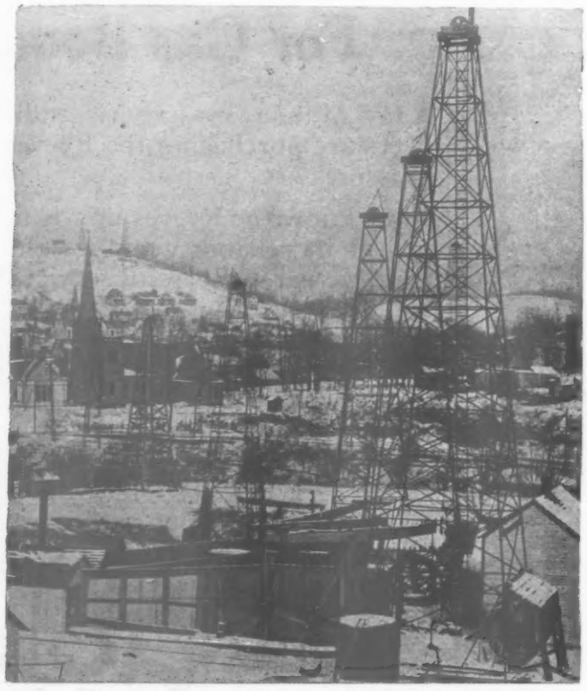
With oil on the free list, it is possible

(Continued on Page 74)

UP TO MOTOR INDUSTRY AND PUBLIC

The question arises: Can we hope to continue the increased recovery of gasoline from crude oil during this time as we have in the past two or three years; and may we expect to improve the quality of crude as we have done in the recent past by still deeper drilling and meet the demand for gasoline until new gusher pools are found?

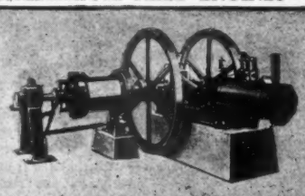
It is more incumbent upon the automobile industry to lengthen out the supply of gasoline by the construction of better cars, and more upon the country by the construction of better roads to increase the mileage, than it is to agitate for lower prices for gasoline, thus hampering without information and unwarrantedly, an industry upon which the automobile industry is absolutely dependent.



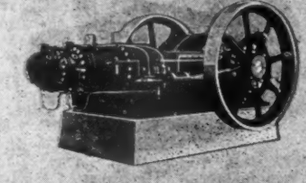
Members of the New York State Oil Producers Association, in meeting in Wellsville, will assemble within 10 miles of Richburg, N. Y., where the first oil field of the Empire State was brought in late in 1880. The picture above shows Richburg shortly after oil was discovered there.

BEST BESSEMER

BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS



The Bessemer Oil Field Engine
Famous in oil territory the world over. The original two cycle engine with cross-head construction.



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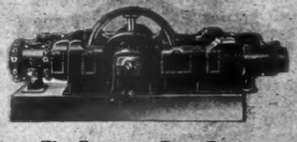

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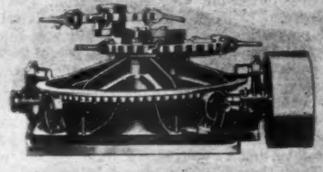

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Luling Tests West Central Texas Lime

Though Small in Area and Total Production it May Prove of Prime Importance in Indicating Potential Development.

By Grady Triplett

HOUSTON, Tex., Oct. 22.—Aside from the value of its own production, the Luling Field of Caldwell County, Texas, has served to establish the presence of oil in one of the porous lime rock formations of Central Texas as well as to lend weight to the possibility that the other similar formations of the area are oil bearing.

The Luling Field draws its production from the Edwards Lime, a lime rock formation encountered in the district below 2,100 feet. Other porous formations underlying the whole of the Balcones Fault area of Central Texas are the Austin Chalk, found above the Edwards lime. Below the Edwards is the Glen Rose formation and still lower is the Trinity sand, this being the lowest member of the Cretaceous series.

In structure the Luling Field is typical of the Balcones Fault zone of Central Texas. The oil has been trapped through being sealed in the faulting of the Edwards Lime along the northwest side of the structure. It is a long, narrow anticline of the type found at Mexia and at Powell, being slightly curved, forming a modified crescent, with a northeast-southwest trend. While the structure is typical of those at Mexia and Powell, the Luling Field produces from a limestone, the first Central Texas Field to be developed from this class of formation, whereas Mexia and Powell production comes from the Woodbine sand.

Common to Vast Area

The type of faulting that has been responsible for the deposits of these three fields is common to a vast area through the middle of Texas. As yet the area has been scantily tested for production from either well defined sands or the limestone formations that underly the district. Some of these formations are oil bearing in other parts of both Texas and Louisiana.

The area, of which Luling is typical, so far as structural conditions are significant, begins in Central Texas and bears to the southwest, terminating around San Antonio. It embraces practically all of Milam, Williamson, Bastrop, Caldwell, Guadalupe, Bexar, Medina and Uvalde Counties, as well as parts of Wilson and Atascosa Counties. Surface conditions are low hills, frequently sandy, with straggling oak and mesquite trees.

This is the area now going through the preliminaries of a thorough testing under the direction of some of the major oil producing companies of the Mid-Continent. The geological data are now being worked out and in some instances the lease men are already acquiring acreage. Among the concerns that have entered the district recently are the Roxana Petroleum Corp., the Arkansas Natural Gas Co., The Texas Co., the Sun Oil Co., the Atlantic Oil Producing Co., the Marland Refining Co., and the Gulf Production Co.

Guadalupe County, adjoining Caldwell on the south, is drawing most attention at present. Much acreage has been taken there. Surface conditions are similar to those in Caldwell County and the geological data thus far worked out are that drilling will reveal subsurface conditions identical with those of the Luling Field.

Fear of Lime Overcome

With the Luling Field to prove the Edwards formation oil-bearing and three other porous lime rock formations running uniformly over the whole of the area, indications point toward other fields being developed from such formations. As the oil industry has had some recent experiences, some of them not encouraging with "lime" fields in Texas, the Luling district has this one handicap. But the continued study and leasing are evidence that the fear of lime production, so unwelcome with some concerns, is not common to the oil industry.

The intervals existing betewen the four porous rock formations of this part of the Balcones Fault area are shown from the log of the Maxwell deep test drilled in Caldwell County. This well, drilled through the Cretaceous series. The Austin Chalk, the first of the four, was encountered at 760 feet in the Maxwell well.

At 1,113 feet the Georgetown-Edwards lime, which produces at Luling, was found. The Glen Rose formation was entered at 2,046 feet. At 2,717 feet the Trinity sand was found and drilled through at 3,405 feet, where the first member of the Cretaceous series was found.

Only one of these, the Georgetown-Edwards lime, ever has been found productive of oil or gas in Texas. But the other three are either oil or gas bearing in Louisiana. In the Caddo Field, the Austin Chalk, known in Louisiana as the Annona Chalk, is oil bearing. The Glen Rose formation is a gas sand, producing in the Elm Grove Field near Louisiana. The Trinity sand furnishes the deep production in the Caddo Pool. It was tested with favorable results three years ago by the Dixie Oil Co. The output of the wells was small but the quality of the oil was excellent, the Baume test showing 45 degrees.

Woodbine Sand

Although the comparison may be of no value, it is significant that the Woodbine sand was the first found productive of oil in Louisiana, much of the Caddo Field being from this formation. The Mexia Field was the first Texas pool developed from this formation in Texas, Powell being the next.

Previous to the development at Luling, the Georgetown-Edwards Lime was found oil bearing in the Kosse well of the Humphreys Petroleum Co. Although this well flowed but a short time, its total output was 40,000 barrels. Other efforts to find oil in this formation or others have failed at Kosse.

So the Luling Field now stands as a sort of key to a vast area known to have favorable structural conditions for the trapping of oil and having four porous lime rock formations, which are either oil or gas bearing in other fields.

Luling is a small pool in area, being a strip more than 5 miles long and varying in width from one-half to three-fourths of a mile. Its area is not calculated to ever exceed 1,800 acres.

The pool is now in its second year and is producing around 10,000 barrels daily, with potential output far in excess of that figure. Development of the pool has been orderly and slow, due to only a few concerns holding the acreage. Its production has been held back because of insufficient transportation facilities. It is without a pipe line outlet. Two railroads, the Southern Pacific and the San Antonio & Aransas Pass, serve the field. Five concerns have loading racks at the railroads, with pipe lines to the field capable of handling as much as 20,000 barrels daily, a figure the field's output has at times reached.

Producers in Luling

Purchasers in the field are the Magnolia Petroleum Co., which has a contract for 1,000,000 barrels of Luling crude with the United North & South Oil Co., the Mutual Pipe Line Co., Elliott Jones, Inc., the National Pipe Line Co., and the Grayburg Refining Co.

The Magnolia is now completing ample storage facilities and a topping plant to take care of its contract for 1,000,000 barrels of oil from the United North & South company. The tank farm and plant are being built near the intersection of the two rail lines and ample pipe line facilities are being placed to the field.

The Grayburg and Elliott Jones concerns, both having refining plants in San Antonio, are running Luling crude, this being their nearest source of supply, other than Somerset, where production is restricted and well controlled. Luling crude tests around 28 degrees Baume and yields 50 per cent of gasoline when put through modern cracking stills.

Depletion curves worked out for an area of 1,800 acres, show that the Luling Field will have total production of around 8,000,000 barrels.

The first well of the pool was completed August 9, 1922, by the United North & South Oil Co., of which Edgar B. Davis is president. This company holds 90 per cent of the proven area of the pool. The first well, No. 1 Rios, began flowing oil and water from a porous horizon in the Edwards formation, which had been encountered at 2,138 feet, where the 6-inch casing was set. At 2,160 feet, the oil bearing horizon was struck and the 200-barrel initial output came after three feet of drilling. Before this well ceased flowing in April of this year, it had run up a production of 25,000 barrels.

Water a Menace

Water, found with the oil in the first well, has been a constant menace to production over most of the field. The water has a sulphur content instead of the usual salt water found in most oil fields. So far, the source of the water has not been determined. A study of the water situation of the pool now is being made by the Bureau of Economic Geology of the University of Texas and the Oil and Gas Division of the Railroad Commission.

One possible source of the water is the presence of the porous horizons in the Edwards formation. Some of these are oil bearing, as wells in the field prove. That others may contain water is a possibility but the fact is not yet established.

Another theory is that the water is coming from above the Edwards formation. Casing is set at the top of this and the inability to make waterproof settings in this type of formation may be responsible for the flowing of water along with the oil.

Regardless of the source of the water, its presence is not retarding development, except as a drawback in handling the extra fluid. Field practices now in vogue are to allow wells to flow into open pits, where the water settles out and the oil is pumped into stock tanks. Disposition of this water is another problem. The San Marcos River, which furnishes abundant boiler water, is used for irrigation purposes below the Luling Field and this makes it impossible to turn the oil field water back into the stream.

Lack Outlet

Drilling in the field has been done with rotary rigs. Turnkey contracts are taken at from $12,000 to $15,000. Some con-

(Continued on Page 81)

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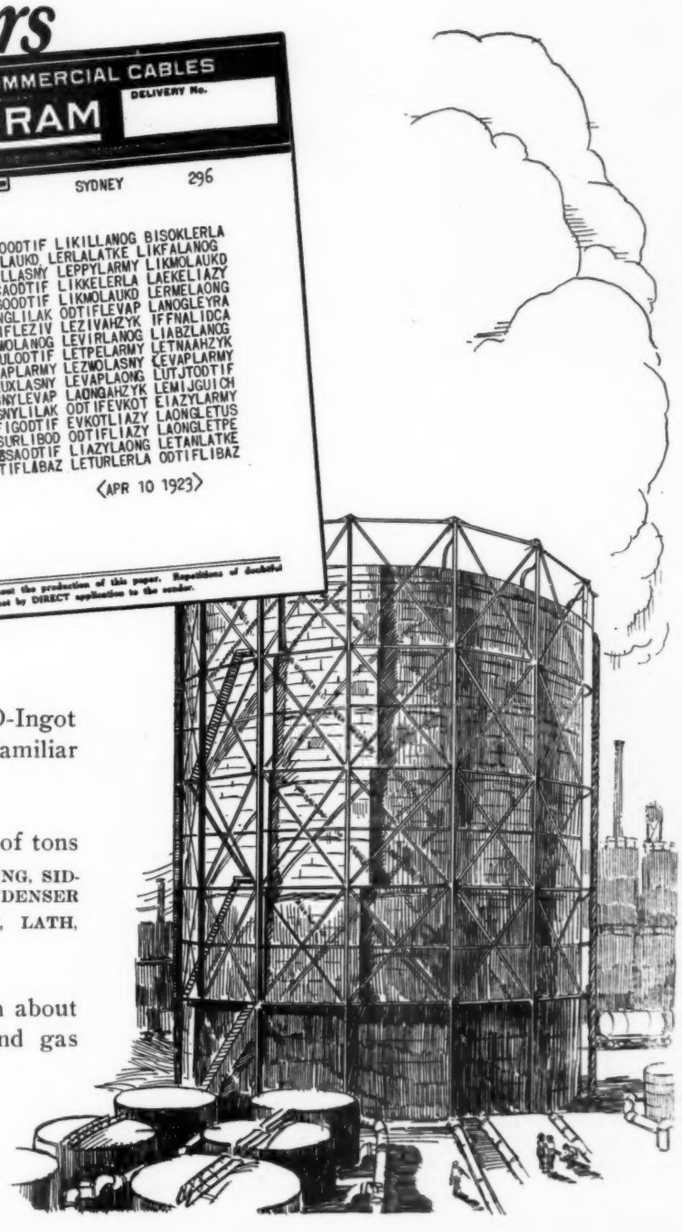

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Johnson C. Lindsay

Johnson C. Lindsay was born March 4, 1884, at Springfield, Ill. His parents moved to Los Angeles, Calif., where he attended grammar and high school, after which he entered the University of California, graduating from the College of Civil Engineering.

In 1910 he was engineer in charge of construction of pipe lines and pump stations for the Associated Pipe Line Co., at Taft, Calif. This was at the time of the height of excitement of the Lakeview gusher when the larger companies were building pipe lines to the Kern County Fields.

For the next few years he was building and electrifying a railroad in the San Joaquin Valley, which was later absorbed by the Western Pacific Railroad. When the United States entered the war, he was appointed civil engineer at Liberty Shipyard at Alamada, Calif., returning to the Associated Pipe Line Company on location and construction of pipe lines at the termination of the war.

In 1921 Max W. Ball engaged him as chief engineer in the building of the first common carrier pipe line between Salt Creek and Casper, Wyo.

On February 1, 1923, Mr. Lindsay was appointed general manager of the Western Pipe Line Commany and Marine Oil Company with headquarters at Casper, Wyo., where he supervises the operations of both companies. He is a member of the American Society of Civil Engineers.

PERSONAL PARAGRAPHS

Mark Kirkpatrick, secretary and treasurer of the Gates Oil Company, Ardmore, Okla., was in Tulsa, visiting his brother, Byron Kirkpatrick, during the recent exposition.

* * *

W. M. Davis, president of the Mid-Continent Oil & Gas Association, whose home is in Bartlesville, Okla., has left for an extended business trip in several eastern cities.

* * *

R. E. Ellis, for several years superintendent of the Kansas division of the Peer Oil Company in El Dorado, has resigned and will undertake private ventures in the oil business.

* * *

Karl Schuyler of Denver, president of the Kinney Coastal Oil Company, was a Casper, Wyo., visitor last week, while looking over the Kinney Coastal's operation in the Salt Creek Field, as well as in other parts of the county.

B. P. Talbot, of the Anglo-Mexican Oil Company, Puerto, Mexico, was one of the many representatives from foreign countries to visit the International Exposition and Congress in Tulsa.

* * *

John E. Lebosquet, independent operator of Tulsa, is making satisfactory progress following his rallying from a serious operation performed recently at the Johns Hopkins University Hospital, Baltimore.

* * *

John B. Schwab, general superintendent of the Tuscarora Oil Company, subsidiary of the Standard Oil Company of New Jersey, with headquarters at Harrisburg, Pa., visited in Pittsburgh last week.

* * *

Chris and Jack Boyle, until recently connected with the Alaska Development Company, in its operations on Pine Mountain, Wyo., have gone to Craig., Colo., where they are expecting to start operations backed by eastern capital.

* * *

F. A. Miller, formerly superintendent of Ferris lease of the Producers & Refiners Corporation, has been recently appointed district superintendent of all Producers & Refiners Corporation properties in the Lost Soldier district, Wyoming.

* * *

Joe A. Noake, formerly with the Southern Equipment Company, of San Antonio, Tex., has entered the sales department of the Witherspoon Oil Company. G. E. Smith is now in charge of the valuation department of the same company.

* * *

E. D. McCally, district manager in the Rocky Mountain region for the Parkersburg Rig & Reel Company, and W. T. Hazel, general sales manager for the same company, returned to Casper recently from an extended trip through the oil fields of Montana.

* * *

C. Dwight Avery, connected with the United States Geological Survey, has completed a tour of investigation through the Wyoming and Montana oil fields for his department, and has left for Denver where he will spend several days at the offices of the Bureau of Mines.

* * *

George Randolph and W. F. Stevenson, of Bowling Green, Ky., who have recently been interested in several wildcat ventures in Hopkins County, near Morton's Gap, Ky., have located in Owensboro. They have a number of leases in the Pellville section which they plan to develop this fall.

* * *

E. T. Williams, president of the E. T. Williams Oil Company, and a director of the Central Pipe Line Company, was called to Indianapolis by the illness and death of his father. Mrs. Williams accompanied Mr. Williams, and both will visit for some time with relatives in the eastern city.

* * *

James D. Berry, president of the James B. Berry Sons Company, has left Oil City, Pa., on a business trip through the West. He was accompanied by Richard Perrine, who is in charge of the London office of the James B. Berry Sons Company. Frank Berry, sales manager for the same firm, is on a business trip in the East.

* * *

Rush D. Graham, of Shreveport, La., who has had wide experience as a drilling contractor in the Louisiana, Arkansas and Texas fields, is erecting a large rotary rig at Salt Creek, Wyo. He is associated with J. M. Curtis on the Midwest Refining Company's contract for development of the Salt Creek properties of this company.

* * *

H. C. Miller, assistant petroleum engineer, Bureau of Mines, who has recently been detailed to safety work in the oil fields, is making a study of accident statistics from the files of the California State Accident Commission. Data relating to 4,000 accidents, which have been furnished by 10 representative companies, are being correlated.

* * *

John J. Kenney, general superintendent of the Eureka Pipe Line Company, and John Darr, general superintendent of the telegraph department of the Southern Group of Pipe Lines, of Pittsburgh, Pa., are spending their vacations at Rockview on the Allegheny River above Oil City. T. M. Magee, of Bovaird, Pa., is also a member of the party.

K. B. Nowels, in charge of petroleum engineering work in the Salt Creek Field for the Midwest Refining Company, has resigned to accept a position as associate petroleum engineer with the United States Bureau of Mines. He will make his headquarters at a new office being established at Shiprock, N. M., where he will be in charge of the work of the bureau.

* * *

A. Gressler, of New York; Dean Watson, of Aurora, Ill., and T. A. Potter, of Mason City, Iowa, have returned to their homes after an inspection of the Danaher well now drilling west of Casper, Wyo., at Bessemer Bend. T. F. Danaher, who is also interested in the test, is well known among Casper oil men, having been interested in several Natrona County fields for the last two years.

* * *

John McFayden, general manager of the Ohio Oil Company in the northwest territory, returned this week from an extended visit in the southern part of Wyoming and in Colorado, where he has been on business for his company. Mr. McFayden inspected the operation near Craig, Colo., and also visited the Baxter Basin and Rock River Fields, where the Ohio is carrying on development work.

* * *

S. L. Gillan, geologist and petroleum engineer of Los Angeles, Calif., is in England on a business and professional trip. In a letter home, Mr. Gillan says that automobile taxes are so high in England that motor cars are rare, so unusual, in fact, that village boys run out and wave their arms and yell as a motorist passes through. The annual tax is one pound sterling per horse power or more than $100 for a Ford car.

* * *

J. E. Erdman, president of the Jim Glenn Oil Company, of Oklahoma City, who claims a service of "50 years under the beam," and who says he probably drilled more wells in Oklahoma than any other one man in the State, was one of the most pleased visitors in Tulsa during the exposition. He was kept busy meeting other old timers and discussing the days when he was associated with Glen Braden, T. N. Barnsdall and others.

* * *

R. J. Lindsay, vice president of the Hope Engineering Company, of Mt. Vernon, Ohio, is inspecting the various activities of his company in the Casper, Wyo., region. The Hope Company recently completed the 165-mile pipe line of the Producers & Refiners Corporation from the Salt Creek Field to Parco, Wyo., and at present is putting the finishing touches to the 18-mile extension of the New York Oil Company's gas line from Poison Spider Field to Boone Dome.

* * *

Announcement was made recently by J. F. Owens, vice president and general manager of the Oklahoma Gas & Electric Company, that one of the most widely known commercial electric men, S. G. Gassoway, would become assistant manager of the commercial department of the company on November 1. In this capacity, Mr. Gassoway will assist the commercial manager, O. A. Jennings, in supervision of the activities of his department in all divisions throughout Oklahoma.

* * *

R. E. Wertz has signified his intention of maintaining a residence in Casper, Wyo., by leasing the home of Congressman Winter for the next six months. Following Mr. Wertz' appointment as vice president of the Producers & Refiners Corporation in charge of lands and leases, it was reported that the oil fraternity of the Northwest was about to lose Mr. Wertz through a transfer to Chicago. His many friends in that State will be glad to know that the report was unfounded.

* * *

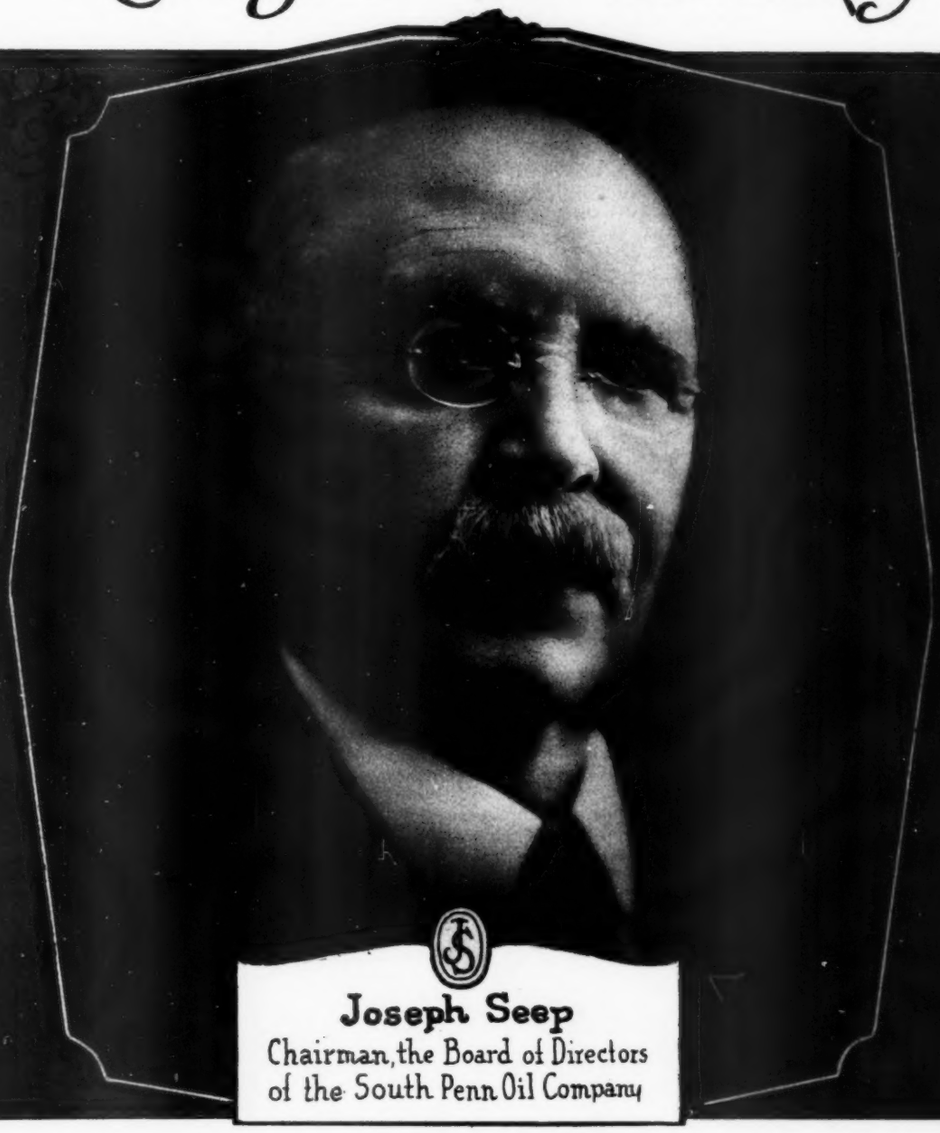
Fred M. Backon spent last week in Tulsa on important business for the Mohawk Drilling Company, rotary contractors at Ardmore, Okla. Mr. Backon has been associated with the Texas Production Company in Wyoming for some time, and was formerly general superintendent of the Wolverine Oil Company at Wilson, Okla., before its amalgamation with the Roxana Petroleum Corporation. Mr. Backon pronounced the exposition the most successful gathering of oil men and oil field ideas that has ever been collected in one city. He declares the future of the Petroleum Congress is an assured fact.

other parts of the county.

Bovard, Pa., is also a member of the party.

of the Petroleum Congress is an assured

The OIL and GAS JOURNAL Rotogravure Section



Joseph Seep
Chairman, the Board of Directors of the South Penn Oil Company

Well past four score years and five, Joseph Seep, "the grand old man of the petroleum world," is hale and hearty, daily traveling from his Titusville home to his office in Oil City, respected and beloved by oil men the world over.

Born in the village of Voerden, Hanover, May 7, 1838, he was a bright-eyed, inquiring boy of ten when his parents landed in New Orleans in 1849, part of that German immigration following the historic year of 1848 which gave America so many fine citizens. They settled at Richmond, Ind., but within six months the father died from Asiatic cholera, then epidemic, and the mother and her four children went to Cincinnati, where an elder daughter had preceded them two years. Joseph added six months' schooling in the then Ohio metropolis to the six years he had spent in Prussian schools, but his native ability compensated for lack of greater educational opportunity.

He learned the trade of cigar maker and worked at it for nine years, removing in 1859 to Lexington, Ky., on the eve of the war. Jabez A. Bostwick, a grain and hemp merchant, noted the boy's industry and took him into his employment. At the close of the war Bostwick entered the cotton business and made young Seep his purchasing agent in the Southern states.

Another decade brought another change and in 1869, following the invitation of Mr. Bostwick who had become interested in the new oil business, Mr. Seep moved to Titusville, which has since been his home and of which he has long been the first citizen.

When the Standard Oil Company was organized in 1871, Mr. Seep's experience as a purchasing agent and his rapidly acquired knowledge of the oil business led to his selection as the buyer of all crude oil for that organization, and the "Seep Purchasing Agency" continued in that capacity until the dissolution in 1911, when he was elected president of the South Penn Oil Co., of which he is chairman of the board of directors.

Mr. Seep was one of the organizers of the Seaboard National Bank of New York, is chairman of the board of the Oil City Trust Company, and associated in many other financial undertakings. But, full of years and honors, he is proudest of the universal esteem in which he is held by veteran oil men, who never miss an opportunity to testify to their admiring fellowship with this last survivor of the old guard of the oil regions.

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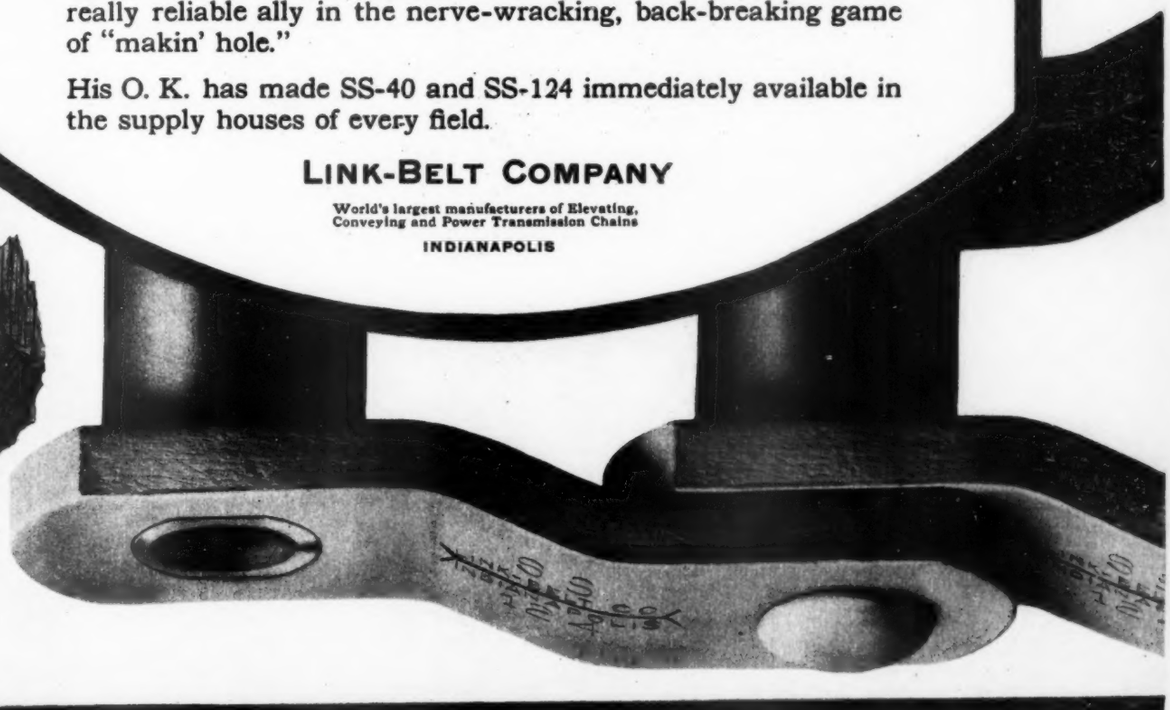
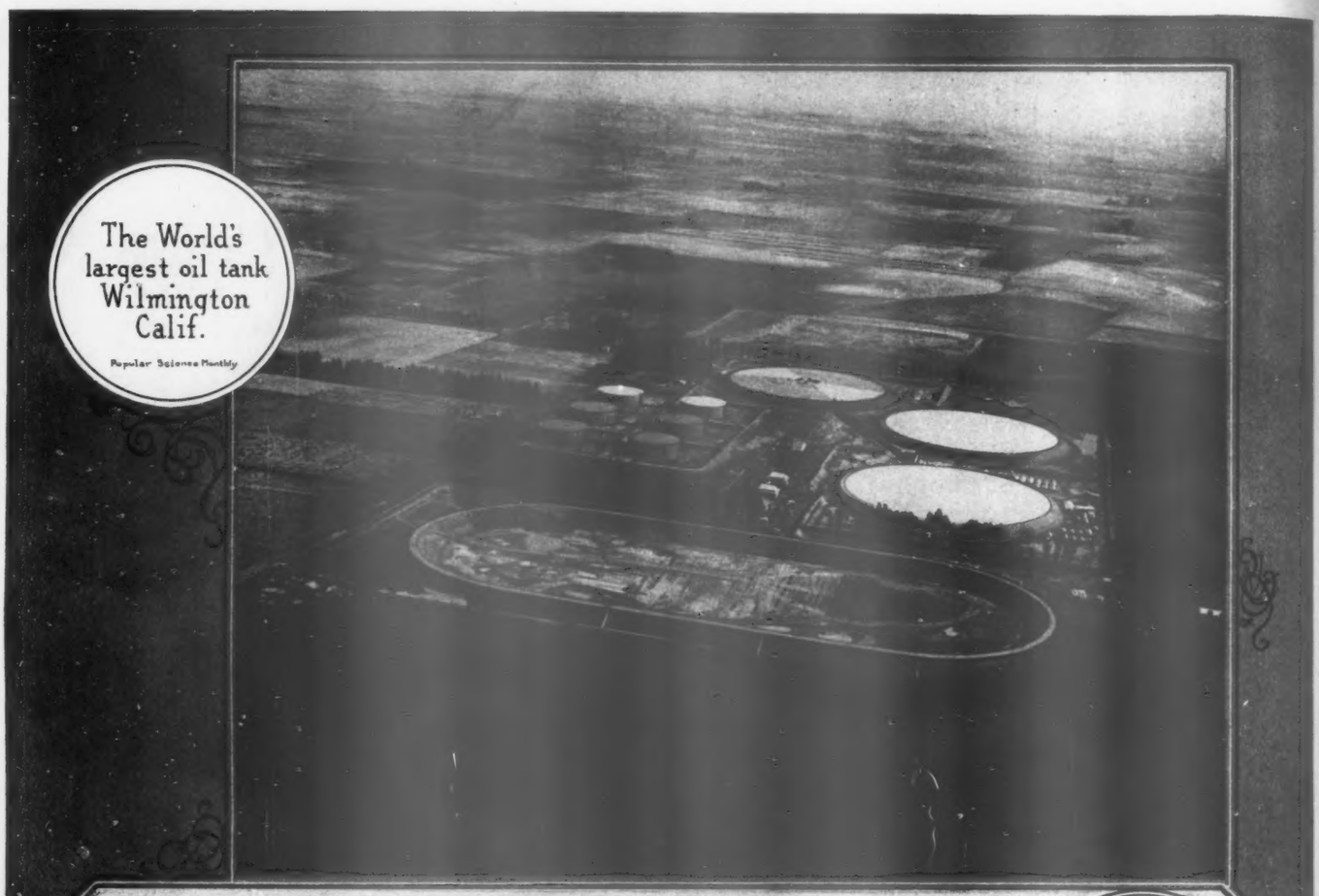


SPROCKET CHAIN SS 124



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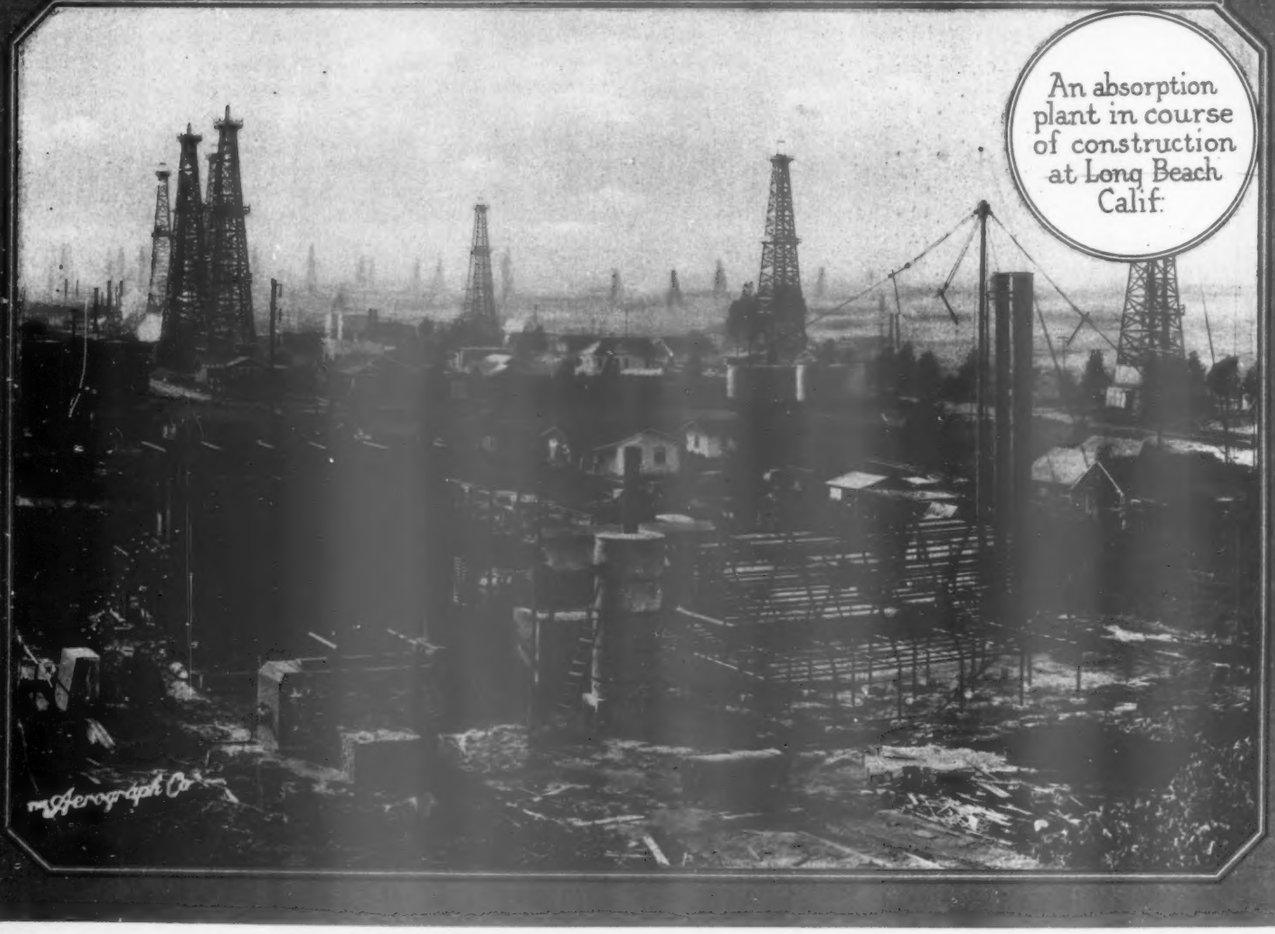
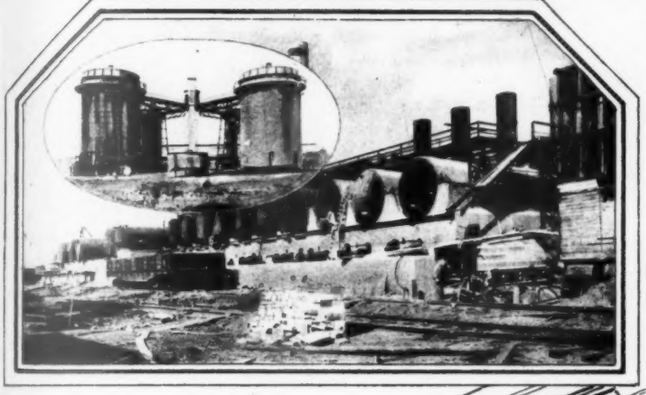
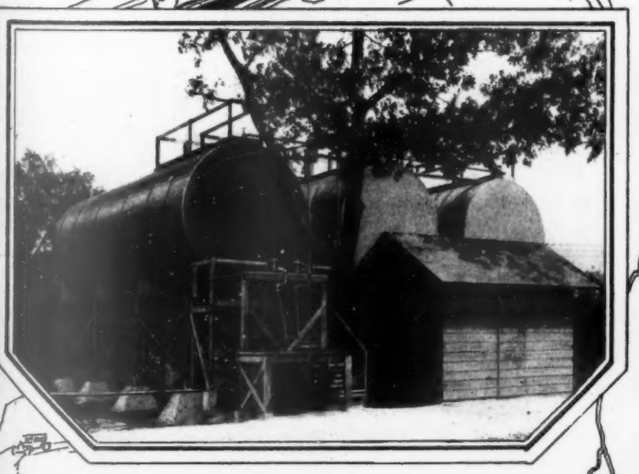
Popular Science Monthly



An absorption plant in course of construction at Long Beach Calif.

Aerograph Co.





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If the name GRAVER were visible on all the equipment GRAVER Corporation has built, it would be seen in this country wherever petroleum, crude or refined, is handled.

GRAVER *Corporation*

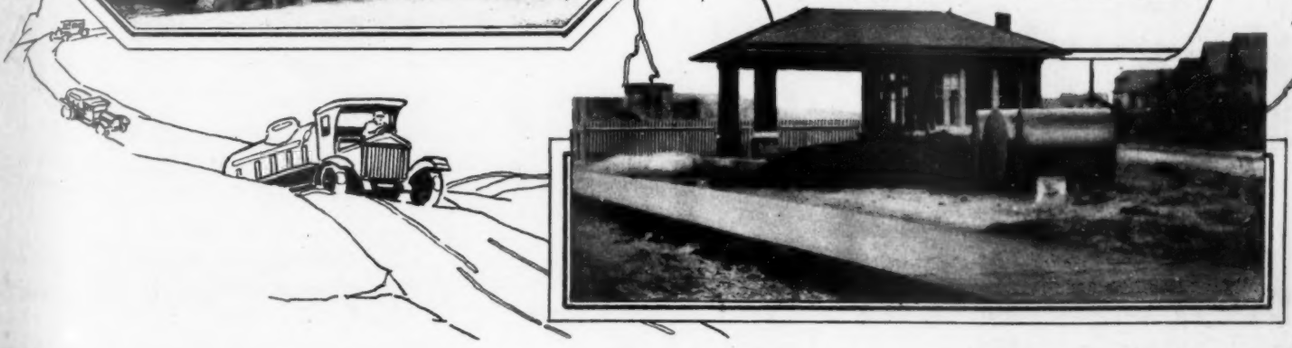
(WM. GRAVER TANK WORKS · FOUNDED 1887)

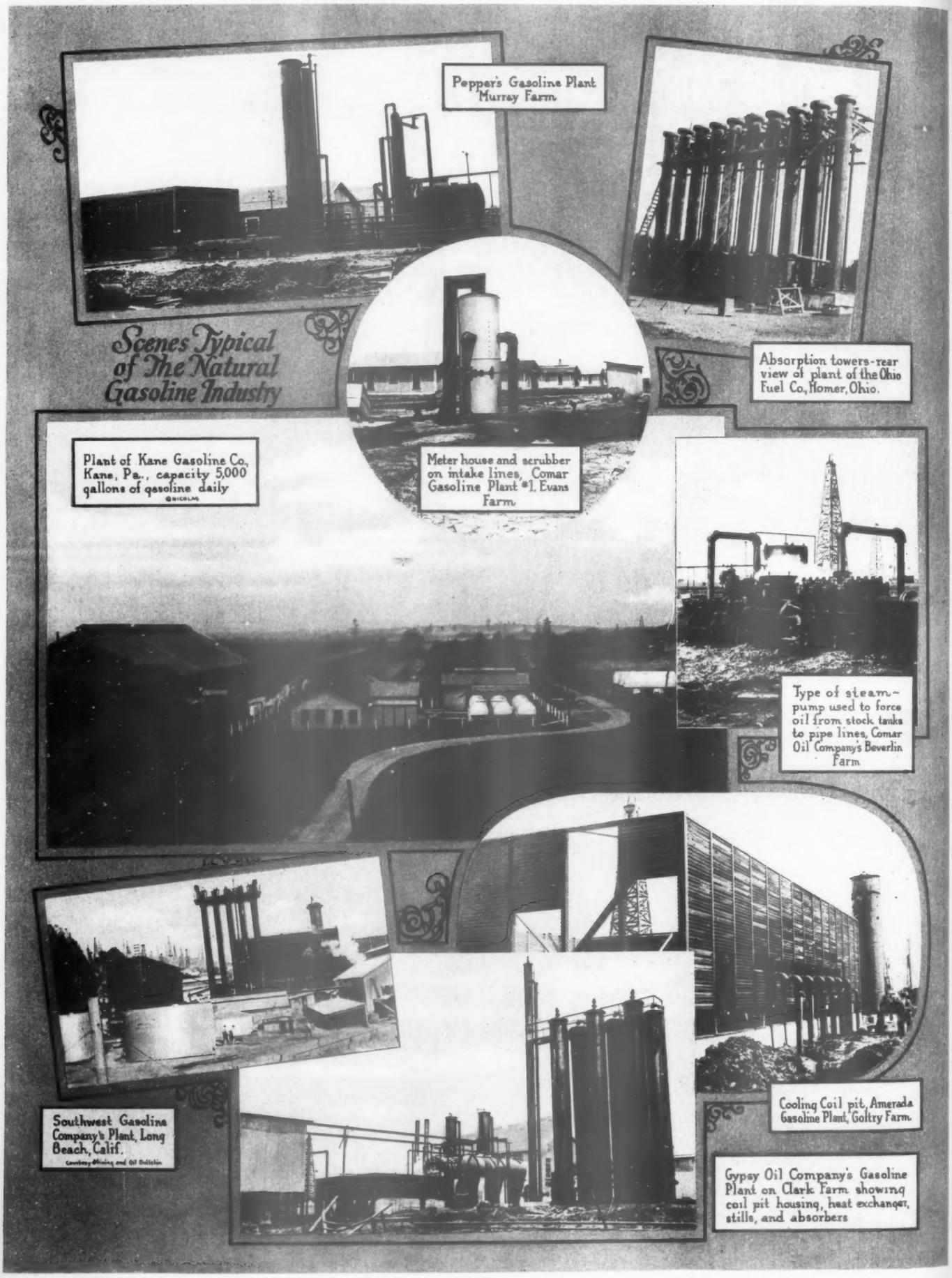
Steel Tanks and General Steel Plate Construction
Water Softening and Purifying Equipment

1945 Todd Avenue, East Chicago, Ind.

423 West Building
Houston, Texas

203 Haver Building
Tulsa, Oklahoma




Scenes Typical of The Natural Gasoline Industry
Pepper's Gasoline Plant Murray Farm
Absorption towers - rear view of plant of the Ohio Fuel Co., Homer, Ohio.
Meter house and scrubber on intake lines, Comar Gasoline Plant #1, Evans Farm
Plant of Kane Gasoline Co., Kane, Pa., capacity 5,000 gallons of gasoline daily
Type of steam-pump used to force oil from stock tanks to pipe lines, Comar Oil Company's Beverlin Farm
Cooling Coil pit, Amerada Gasoline Plant, Goltry Farm
Gypsy Oil Company's Gasoline Plant on Clark Farm showing coil pit housing, heat exchanger, stills, and absorbers
Southwest Gasoline Company's Plant, Long Beach, Calif.
Courtesy Mining and Oil Bulletin

CRANE PROGRESS

SIX NEW LINES

of Valves and Fittings

For steam, water, oil and gas

Series 15	Series 25	Series 35
150 Steam	250 Steam	350 Steam
300 Water	500 Water	700 Water

WORKING PRESSURES

Series 50	Series 75	Series 150
500 Steam	750 Steam	1500 Steam
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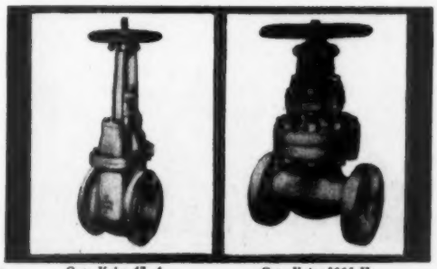


Gate Valve 47-A Series 15 *Gate Valve 3005-H Series 150*

Night Scene of burning oil and gas well
Photo by Grabill

Flow boxes and Lake of oil, Smackover, Ark.
© Hopkinson

Stream of oil filling earthen tank
© Hopkinson

Oxen formed motive power at Smackover, Ark.
© Hopkinson

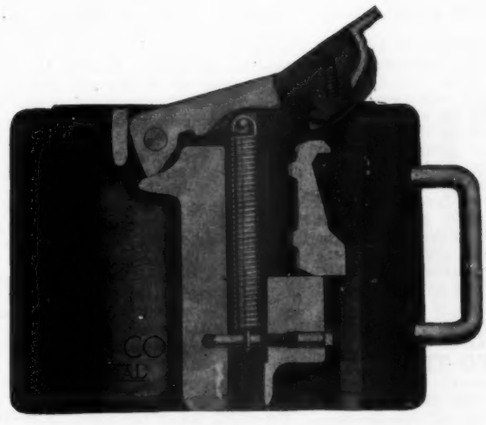
IDEAL

Safety Elevator

TYPE "C"

Open View

Positive locking latch facilitates speed in handling pipe—with absolute safety.



Sectional Side View—Open

NSCO THE NATIONAL SUPPLY COMPANIES NSCO

NATURAL GAS DEVELOPMENTS

Texas Panhandle Has Plenty of Gas But No Use for It

By Anthony McCauley

AMARILLO, Tex., Oct. 22.—With more than a billion feet of gas per day already available from wells in the Amarillo Field, and a local market consuming only 6,000,000 feet, with little prospect of large local market for domestic and industrial uses for years to come, in proportion to the swiftly growing supply which is augmented as new gas wells are brought in, the people of the Texas Panhandle are eagerly hoping for the early establishment of numerous carbon black plants to take up the surplus and spread the resultant profits throughout the community.

Action of the Texas State Railroad Commission is anxiously awaited by the inhabitants of the entire panhandle, in the case of the application for permission to install a carbon black plant here, filed recently by the Mountain States Gas Co., a subsidiary of the Producers & Refiners Corp. Some local opposition to the granting of this particular application in exactly the form submitted by the company, has arisen, based mainly upon the contention that it was made in "blanket form" and would permit indiscriminate location, without due regard to expediency from the standpoint of the field in general, and possibly might result in effects prejudicial to the public welfare. However, it is said these objections are matters than can be easily met by the applicant corporation.

A poll of the cities, towns and hamlets of the panhandle indicates that the people in general are overwhelmingly in favor of the Railroad Commission's issuance of permits for installation of carbon black plants, under such conditions with regard to location, capacity, and situation of the wells drawn from, as would assure maximum profits to the various classes affected and at the time would protect other operators drilling for oil in the districts involved. The people of this part of Texas are thoroughly awake to the fact that the only practicable, commercial utilization of their vast natural gas resources, is through the early establishment of great carbon black plants, to be run in conjunction with gasoline absorption plants.

The city of Amarillo uses 1,000,000 feet per day, while the local smelter of the United States Zinc Co., uses but 5,000,000 feet per day and these constitute the only market for all of the gas produced by the wells in the panhandle.

Representatives of manufacturers of automobile tires, printers' ink, and other products in which carbon black is used, have made exhaustive investigations of the Panhandle gas fields, and aver that this region bids fair to develop into the greatest carbon black producer on the globe, if local operators are not interfered with or restricted by the Railroad Commission.

PITTSBURGH GAS RATE ADVANCED TEN CENTS

HARRISBURG, Oct. 20.—A flat increase of 10 cents in all classifications is provided in a new tariff filed by the Manufacturers Light & Heat Co., operating in Pittsburgh and vicinity. The new tariff is to become effective November 15.

The rate for domestic consumers is increased to 63 cents a thousand feet with 3 cents discount if paid before a certain time. The rate for hospitals and public schools and other public buildings is increased to 53 cents.

INDEPENDENCE GAS TEST

The gas division of the Empire companies is making preparation for the drilling of a deep test well for gas in the old Independence, Kans., gas field, which has been a steady producer for many years. Drilling tools are being hauled to the location and the test will be started in a short time. The well will be drilled on the Ben Johnson farm in the southwest corner of the northeast of 25-33-15, Montgomery County. This is in the center of a large block of acreage held by the Empire companies. In drilling this test, the Empire plans a thorough test, going to the granite, if necessary. The company will push below the Bartlesvill sand from which the field has always produced, and will test the Burgess, Wilcox and Turkey Mountain horizons. The field is on the Kansas Natural system and the test well located 4 miles south of Independence.

MONROE GAS FOR TEXAS

Gas from the Monroe Field in Louisiana may soon be piped into Eastern and Southeastern Texas through the activities of Henry Morris and associates of Dallas. They have expended about $1,500,000 in developing gas in Morehouse Parish and are soon to begin laying a pipe line 35 miles long from Bastrop to West Monroe. They have obtained a gas franchise in Rustoh, Texas, which is expected to be the first terminus in that State of a system of lines out of Louisiana.

The Chenter Carbon Co. of Monroe is the latest of the many manufacturers of carbon that in recent years have entered that territory. It will erect a carbon plant and gasoline plants in the Monroe Field. Percy P. Learned has been elected president of the company, G. W. Booze, vice president and L. B. Adams secretary. The capital stock is $250,000.

EASTERN GAS MAN

Ed Holland

General superintendent Union Gas & Oil Co.'s properties, who is located at Martha, Ky.

HEALTH COMMISSIONER TELLS HOW TO AVOID GAS POISONING

By Dr. Matthias Nicoll, Jr.
State Commissioner of Health, New York

It is just this time of year that we begin to see newspaper accounts of people being overcome or dying from gas poisoning. Such accidents are of common occurrence all during the period when it is necessary to supply artificial heat in our homes. In Ohio last winter there were 69 deaths and 113 partial asphyxiations from gas poisoning. What are the dangers and how can they be avoided?

As the weather gets cold, we close our windows and seek some method of supplying a moderate degree of warmth without starting our stoves or heating systems. Later, we seek auxiliary ways of bringing up the temperature of our rooms quickly in the early morning. To meet this demand, manufacturers have placed on the market many different kinds of gas heaters. Reputable concerns selling such apparatus give careful directions as to how it can be safely installed, but all too often gas appliances of this kind are sold by persons who know little and care less about what may happen after the article leaves the store. A short explanation of what takes place when gas is burned will help us to understand what what the dangers are and how they may be avoided.

Carbonic Acid Gas Formed

When artificial or natural gas is burned completely, that is, given sufficient oxygen for complete combustion, carbonic acid gas (also known as carbon dioxide) is formed. It is not dangerous in small amounts; in fact, it is the same gas that is thrown off by the lungs in breathing, so that there is always a small amount of it in the air of crowded halls, theaters, churches, lodge rooms and other indoor gathering places. Of course if you stayed in a tightly closed room into which carbonic acid gas was being constantly thrown off, you might smother after a while, but long before that time came you would feel oppressed and stifled and would naturally seek fresh air. Even when a person is overcome with this gas he revives very quickly in the open air with no apparent ill effects.

On the other hand, when gas is burned with only a limited supply of air or if the burning gas strikes a cold surface, deadly carbon monoxides gas is formed This gas when breathed acts quickly. Moreover, once a person has breathed in a lot of this gas it acts so quickly in fact that persons are often overcome before they realize that they are in danger. Even if he realizes it, the victim does not recover at once in the open air, but may be sick for hours or days or may not recover at all. This is because the monoxide actually combines with the red blood corpuscles and prevents their giving oxygen to the tissues of the body. When and under what conditions is carbon monoxide formed?

Gas heaters are of two kinds: The luminous or bright flame and the nonluminous or blue flame type. In the former, no air is mixed with the gas

(Continued on Page 94)

INCREASE OF 400,000 IN CONSUMERS OF GAS

ATLANTIC CITY, N. J., Oct. 20.—Customers of United States gas companies increased by 400,000 in the last 12 months, according to figures made public in connection with the fifth annual convention of the American Gas Association.

Charles A. Munroe, vice president of the People's Gas Light & Coke Co. of Chicago, said the nation was increasingly turning to gas for the solution of the fuel problems. In the 110 years gas has been a public utility, Mr. Munroe said, several times people thought it had reached the limits of its usefulness, but "invariably new uses discovered increased the industry's growth."

Thoms A. Edison's electric light discoveries 44 years ago last December caused a world-wide panic among gas company shareholders, declared Mr. Munroe, but invention of the incandescent mantle kept gas in the foreground when electricity became a dangerous rival. Then, in 1900, improvements in gas ranges brought big gains to the industry.

"Now the use of gas in industrial heating is making tremendous strides," he continued. "Demands for household heating by gas are besieging every company in the country. Statistics show that in the last 20 years the output of manufactured gas has trebled and in the last 10 years it has doubled.

"Coal shortage and transportation troubles have combined to awaken the nation to the necessity of a permanent fuel supply. This has focused attention on gas. Executives in closest touch with the industry are unanimous in the opinion that it is on the threshold of an expansion beyond any previously expressed."

Three thousand executives and engineers of gas companies attended the convention.

F. A. Lemke of Kalamazoo, Mich., said that more than $40,000,000 worth of gas appliances will be sold to the public in 1923 by gas companies alone, exclusive of unrecorded sales by private dealers. This means, he said, that for the 9,200,000 meters in service more than $4 per meter will be spent this year for ranges, water heaters, lighting fixtures and other appliances.

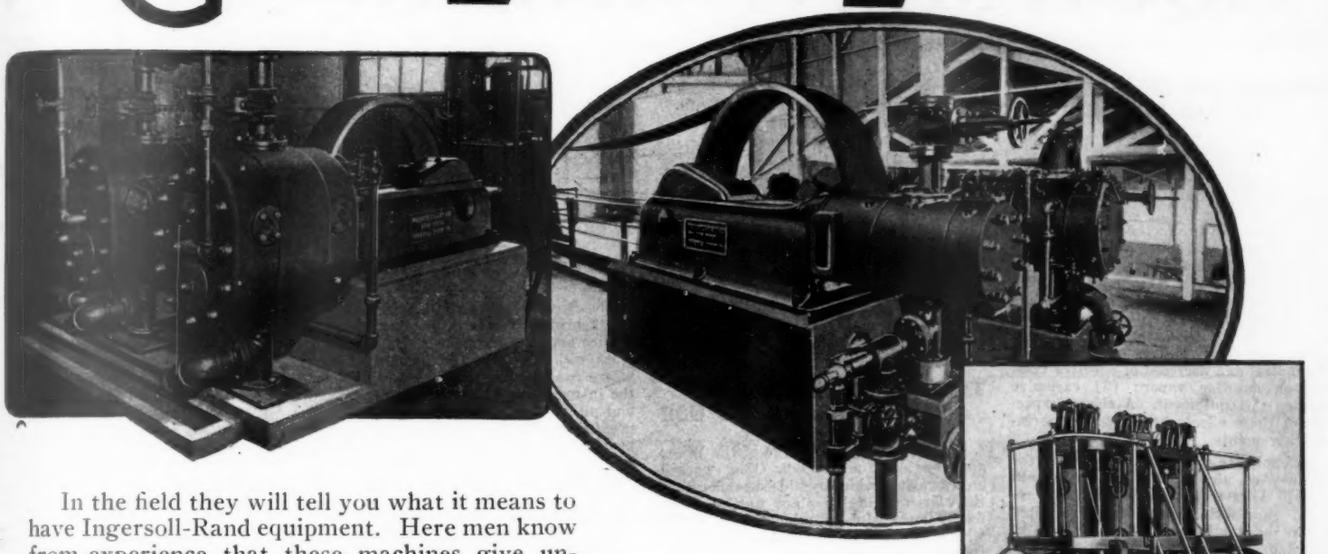
In the opinion of R. B. Brown, president of the association and general manager of the Milwaukee Gas Light Co., universal house heating with gas is not to be expected by this generation unless the entire present methods of charging for gas service is discarded and a system substituted which will permit gas companies to charge each class of customer for the specific service demanded.

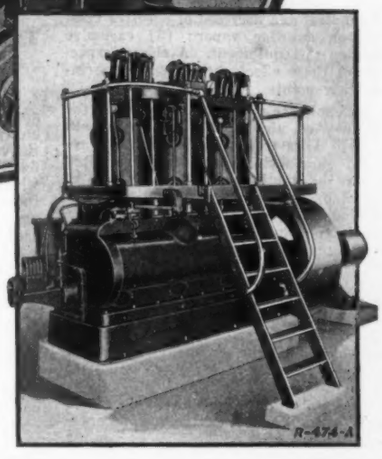
Announcement was made that house-heating installations are being made in New York City at the rate of 400 a year. Executives representing companies on the Pacific Coast reported 4,000 gas-fired furnaces in use in San Francisco, 7,000 in Portland, Ore., and several thousand in Los Angeles.

STRIKES GAS FLOW

ENID, Okla., Oct. 22.—The Hopper Oil Co., drilling in the northeast corner of northwest quarter of section 12-22-4, Garfield County, reports a nice flow of gas at 1,090 feet, 13 feet shallower than in Seamon No. 1, which the well now drilling offsets. No. 1 Seamon came in for about a 50-bbl. well of 46 gravity oil, according to the company, but No. 2 is expected to be a better producer. This is not far from the Garber production, south of Garber and east of Enid.

GASOLINE EXTRACTION EQUIPMENT





In the field they will tell you what it means to have Ingersoll-Rand equipment. Here men know from experience that these machines give uninterrupted, reliable service under the most severe duty.

They appreciate that the buidlers know their problems and have furnished machinery built to meet the conditions.

And, they know that there is an Ingersoll-Rand office nearby where they can get immediate attention and the services of engineers whose specific duty is to co-operate with owners and operators of gasoline extraction plants.

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GAS MEASUREMENT

Westcott Differential Gauges
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For Accurate — Constant — Economical Work

Measure With Metric

WESTCOTT & GREIS
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Gas Measurement and Control

METRIC METAL WORKS
of AMERICAN METER COMPANY, Inc.
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EQUIPMENT AND SUPPLIES

PERCENTAGE OF AIR IN GAS LINE SHOWN

By V. Wichum, M. E.

The mixing of air with natural gas brings into gasoline production a grave element of danger and causes considerable decrease in production.

The dangers and losses due to this contamination of gas with air are caused by (1) the formation of an explosive mixture in the lines; (2) inefficient production of gasoline because of improper cooling after compression, imperfect precipitation, increased volume of mixture to be handled, and decrease of effective pressure on gasoline vapor; (3) excessive wear on the equipment. A closer inspection of these effects brings out some interesting points.

An explosive mixture is formed by the presence of air in the gas in certain ratios. Disastrous explosions have resulted when such mixtures become ignited within the line by a spark which may be caused by so slight a disturbance as the striking of a pebble against an obstruction in the pipe.

The thermal valve is lowered and an element of danger introduced when gas containing air is consumed for light, heat or power. The admixtures of air either produces explosions at the burner or, if the air is in a slug, extinguishes the flame or pilot light so that on the return of the gas to the burner there is danger of explosion of suffocation.

The production of gasoline is decreased because the efficiency of the various operations is reduced by the presence of air in the gas.

Effective compression cannot be obtained because a lean gas, one containing considerable air, causes the compressor to run hotter than does a rich, wet gas. The compression of a rich, wet gas produces two-thirds the heating effect of a dry gas and about one-half the heating effect of the air. The result is that when it becomes necessary to handle lean gas, the compressor runs hotter, which means that more cooling is required or else the compressed gas is delivered at a higher temperature.

The efficiency of the cooling system is lowered by the delivery of this warmer gas. The precipitation is less perfect and the separation of the vapors is incomplete. The waste gas, which, under these conditions is very rich gas mixed with air, is usually utilized in running engines of the plant. Because it fires too soon and burns too rapidly, it causes undue heating of the engine cylinder, excessive wear and decreased power delivery.

Gasoline vapor is carried out in the waste gas, the air acting as a vehicle. Thus, 1,000 feet of gas of a certain richness will produce three gallons of gasoline, but if mixed with 1,000 feet or air only two gallons can be obtained.

The output of all operations is smaller simply because the more air a given plant is forced to handle, the less gas it can handle and consequently the less gasoline it can yield.

In the production of gasoline by compression the effectiveness of the pressure on the gas is reduced by the presence of air. The pressure necessary to start condensation must be twice as great if the air present has increased 50 per cent. As it is not usually desirable to change the pressure, the introduction of air is responsible for a serious decrease in gasoline production.

Because of these dangerous and troublesome effects, the exclusion of air from pipe lines is essential to safe and economical operation.

But the detection of leaks in vacuum lines by ordinary methods is impossible. Periodical inspection of the line by throwing them out of service and applying gas or air pressure is an expensive procedure. Occasional tests with a portable apparatus do not give the continuous information which is the only guide to the true conditions. One method which seems to meet every requirement is provided by the Tag-Mono Air Recorder, manufactured by the C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y. This dependable device shows the percentage of air in gas at all times by writing a continuous record on a chart. As soon as the air content becomes high, immediate steps can be taken to locate and eliminate the leakage which is responsible.

TIME SAVING DEVICE FOR GAS ENGINE USE

Glenn A. Davis, in charge of the Wiser gasoline plant near Lodi, Ohio, worked on a problem which would better improve the efficiency of his plant until he was finally successful in perfecting a device which may be in great demand in the future where gas engines having magnetos with breaker boxes attached are used.

Mr. Dennis' contrivance permits the changing of breaker-boxes in magneto without shutting down the engine, thus saving time and expense in the operation of the plant. In operating the contrivance known as a breaker-point adjuster, it is necessary to have an extra breaker-box. The points are removed from the breaker-box and placed in their proper position in the device which compels even a beginner to file the contact points correctly and leave an even surface, which feature alone is a very valuable asset to operators using gas engines.

After removing all sediment from the breaker-box and contact points, they are reassembled and the breaker-box is inserted in Mr. Dennis' device which sets the point at the proper distance of one-sixty-fourth of an inch. When the points in the magneto on the engine start to miss, the engine is "speeded up," the defective box removed and new box inserted. The momentum of the engine keeps it in motion until the change is made.

OPENS TULSA SALES ROOM

The Brown Welding & Machine Co., of Breckenridge, Texas, is opening a rental service and sales room in Tulsa. The new store will serve the Oklahoma territory, where considerable business has followed the introduction of the Devil's steel hand and pitchfork, a fishing tool which is advocated by this firm. The tool is particularly adaptable for fishing underreamer lugs, rotary bits, rotary rock bit cones and small pieces of steel which have fallen in the hole and impede progress. Cleve Johnson, formerly with The Texas Co. in North Texas, will have charge of the new store.

PORTABLE PAINTING OUTFITS

Paasche portable painting outfits, furnished with gasoline engines or electric drive in a variety of sizes, are gaining recognition in the oil fields with their ready adaptability to painting all kinds of tankage readily and effectively in addition to many other uses. They are particularly advantageous in painting large steel storage tanks, and it is the claim of the manufacturers that one outfit will do the work of six men using brushes. The Paasche air control distributing head has been perfected and refined until it embraces functions of a half dozen contrivances. It is manufactured by the Paasche Air Brush Co., Chicago.

TURN REPORTED BY STEEL MILLS; PRICES ARE RIGIDLY MAINTAINED

By B. E. V. Luty

PITTSBURGH, Pa., Oct. 22.—While the steel market is by no means active the mills make no attempt to conceal the fact that the market condition they find today is better than they had expected. According to most precedents the steel market would have grown very soft by this time and production would be greatly curtailed. It is now fully six months since bookings ceased to run ahead of shipments, taking steel products as a whole, for the Steel Corporation's unfilled tonnage increased last May, while every month since then it has decreased.

About last April, therefore, the steel mills began to run partly on what was called "momentum," the shipments exceeding the incoming business. Now there is so little old business left that current shipments are based chiefly on new business, and this has lately become the case even with the United States Steel Corp.

It might be thought the Steel Corporation is running chiefly on old business, seeing that it reported unfilled obligations on October 1 of 5,035,750 tons, which is equal to more than four months of shipments at 85 per cent of capacity, but this tonnage in itself does not mean anything, as there is much business included in the showing that is not really alive. The shipments depend upon what the customers will take. To illustrate, July 1, 1921, the corporation had slightly more "unfilled obligations," 5,117,868 tons, against 5,035,750 tons at the first of this month, yet was able to operate only at about 25 per cent in July, 1921. Thus even the Steel Corporation is now dependent upon what may be regarded as new business to sustain its operations.

More Orders Received

Pretty steadily month by month through September the volume of new business booked by mills tended to decrease. This month now seems to have witnessed a turn, orders received thus far this month exceeding those in the same period of September. As old orders have been playing out, production has been decreasing since April, when the record rate of production was attained, but the rate of decrease is now very low. Production is about 18 per cent under the peak rate, and while it is at the lowest rate of this year it is but little under the highest rate of last year.

Except in black and galvanized sheets all finished steel prices are being rigidly maintained. Mills are watching each other very closely and recognize that any price cutting would probably induce retaliation and pull down the last spell of low prices, leaving less room for prices to decline without producing losses. The losses of 1921 are well remembered, and price cutting will not begin as easily as it did in that year.

Oil Country Goods

Demand for oil country tubular goods is of very small proportions, reflecting both the excess of drilling in the past and the impending winter. Pipe mills

(Continued on Page 125)

New Filtering Outfit Purifies Oil By Electric Treatment

In order to make it possible for central stations and other large users of transformers, oil circuit breakers, electrolytic lightning arresters, and feeder voltage regulators to successfully dehydrate and purify large quantities of oil with a minimum of expense, the Westinghouse Electric & Manufacturing Co. has developed a special type of filtering outfit for this service.

While the principal class of service for which these outfits were developed is the treatment of insulating oil, there are many other applications for which they are well fitted. Insulating varnishes, compounds, etc., that have a sufficiently low viscosity, and machine oil of all kinds, petroleum, benzine, etc., can be effectively cleaned and dehydrated.

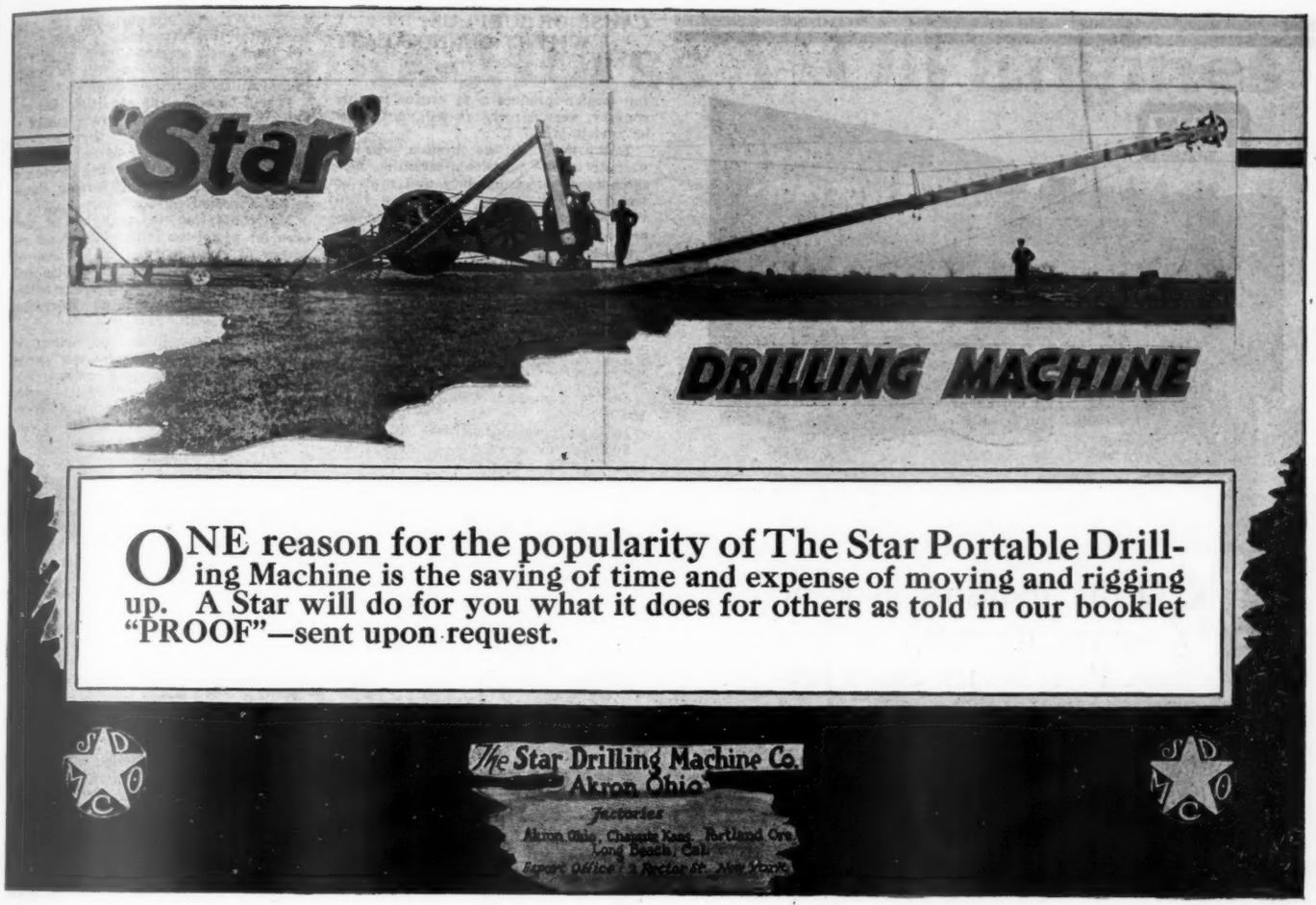
The outfits are made in five standard sizes, divided into two classes according to the size of the filter paper. The three larger sizes are rated at 10, 20 and 30 gallons per minute and the two smaller sizes at 2½ and 5 gallons per minute. A complete outfit consists of a filter press, motor, pump, oil strainer, pressure gauge and piping. The sizes, up to and including 10 gallons per minute, are mounted on an iron base cast with a high rim that forms an enclosure and serves as a drip pan. The 20 and 30-gallon sizes are mounted on a structural iron base and have a sheet metal drip pan.

The filter press proper is made up of a series of flat cast-iron plates and frames assembled alternately with filter papers between them. By means of a screw and lever and a movable cast-iron end block, the plates, frames and papers are forced tightly together. The plates and frames are cast with holes "A" and "B" in two of the corners. When the plates and frames, with the filter papers between them, are assembled, the holes "A" and "B" form respectively, the inlet and outlet of the oil.

The oil entering under pressure at the top corner through the inlet formed by the holes "A" in the frames, plates, and filter papers, enters by means of the "A" openings in the frames and fills each of the chambers formed between each set of two filter packs. From these chambers there is no outlet opening and the oil is consequently forced through the filter papers that form the sides of the chambers. The filter paper thus takes up all the moisture and screens out all sediment from the oil. After passing through the filter paper, the oil flows along the grooves formed by small pyramids constructed on both surfaces of the plates to the opening "b" in the lower corner of the plates and thence out through the outlet "B."

The filter paper used is a special grade of white blotting paper about .025 inches thick. It is prepared from wood pulp and contains no coloring matter or chemicals that might injure the oil. Five sheets, cut to the proper size with holes punched to correspond with the holes in the filter plates and frames, are used between each plate and the adjacent frame.

To obtain the best results in treating the oil it is absolutely necessary that the filter paper when first placed in the filter press be entirely free from moisture. Since filter paper will invariably absorb moisture if exposed to the air for any length of time and must, therefore, be thoroughly dried under heat before it is used, specially constructed drying ovens have been designed for this purpose.



ONE reason for the popularity of The Star Portable Drilling Machine is the saving of time and expense of moving and rigging up. A Star will do for you what it does for others as told in our booklet "PROOF"—sent upon request.

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Akron Ohio
Factories
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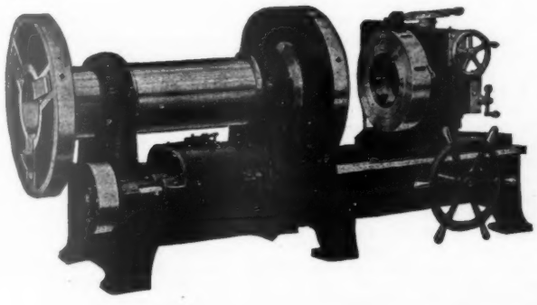
PEERLESS B&K DUPLEX P.D.Q.C



Repeaters

When you are ready for a new pipe machine will you buy another like the one you now own? B & K owners, who are a discriminating class, place repeat orders. A careful survey of sales for many years back shows this to be true.

The reason is not hard to find. The machines are so rugged and well proportioned, so convenient to handle, and so well designed, that once a user, repeat orders are the rule.

The well known Peerless Die-Head, or the new Tangent Die-Head can be furnished.

Catalog tells all about them

BIGNALL & KEELER MACHINE WORKS
Edwardsville, Ill.

SO the industry may be served promptly in any crisis, P. I. W. invests a fortune in steel plates. And many times in the face of a rising market, its customers have shared the saving made possible by this courage and foresight.

P. I. W. is big enough to do these things, and yet human enough to pass them along.

Wire or write for prompt shipments of tankage and equipment.

"P. I. W. Service Is World Wide"

THE PETROLEUM IRON WORKS COMPANY

SHARON, PA.

New York St. Louis Houston Casper Tulsa San Francisco

CAUSE OF SURPLUS; WHY IT CANNOT LAST

(Continued from Page 56)

for foreign producers to create in this country, very largely at will, a famine or surfeit of oil.

In my judgment, the question most important in the petroleum situation pertains to a petroleum duty and rates of transportation. Along these lines, I invite your attention to the following figures:

Petroleum Figures in Closing Year of World War

1918—	Bbls.	Daily Av.
Consumption of petr.	413,078,000	1,131,858
Domestic production	355,927,716	975,144
Imported crude	37,736,000	103,385
Total crude available	393 663,716	1,078,531
Consumption in excess of domestic prod.	57,150,284	156,714
Motor vehicles registered	6,105,974	
Motor vehicles increase	1,113,822	
New wells drilled	25,684	

Our total production in 1915 was 251,104,104 bbls.

In 1922 it was 551,197,000 bbls.

Increase in seven years, 300,092,896 bbls.

During these seven years, 183,424 wells were drilled.

Average of the 183,424 wells to create 300,092,896 bbls., increase was 16.9 bbls. per well.

Daily average domestic production, 1922, 1,109,815 bbls.

First Six Months 1923

Wells drilled	10,010
Estimated daily domestic production, July 1, 1923	2,225,000
Daily average domestic production, 1922	1,109,815
Increase first 6 months 1923	1,115,185

or 111.3 bbls. per well.

How long can these 10,010 wells maintain 111.3 bbls. daily, if 183,242 wells in seven years added only 16.9 bbls. to daily production, and if average of the 284,880 producing wells January 1, 1923, was only 5.7 bbls. each?

Registered motor cars January 1 1923	12,238,375
Increase in 7 years	9,758,633
Increase first 6 months 1923	1,829,791
Total number June 30, 1923	14,168,166

Year	Crude Prod. (Bbls.)	No. Cars	Per Car
1916	300,767,155	3,584,667	83.9
1918	355,927,716	6,105,974	58.3
1920	442,929,000	8,887,572	49.7
1922	561,197,000	12 238,375	44.2
1923	700,000,000	15,000,000	46 6

In 1916 we recovered approximately 20 per cent of gasoline from crude. Today we average upwards of 40 per cent. So the amount of motor fuel today with nearly five times as many cars and almost half as much crude per car is practically the same as it was in 1916.

Production Figures Mislead

Figures on production are misleading. In 1922, our production was 551,197,000 bbls., a daily average of 1,510,128 bbls. Today it is said to be approximately 2,225,000 bbls. In other words, the production of this country has been increased 1,000,000 bbls. in one year.

Shortly over a year ago we had a settled production of approximately 1,000,000 bbls. It took us 63 years and the drilling of over 600,000 wells to acquire this output.

During the last year, we have drilled approximately 25,000 wells, and we are told have created an additional production of 1,225,000 bbls. An average of 49 bbls. to the well.

There are approximately 285,000 producing wells in the United States today, with a daily average including all the great gushers, of a fraction less than 8 bbls. to the well.

If the 25,000 wells, the past year, get down to even a normal production in six months, as they always do, we may expect a slump in present production, during the next few months, of 500,000 bbls. a day. We will be doing exceedingly well if actual daily production next April is 1,500,000 bbls. Providing, of course, no new gusher pools are opened.

Doubts Potential Production

I doubt very much if our daily production is as great today as we think it is. In the past, when we have reduced runs from wells, 50 or 75 per cent, we have found, when we attempted to open them up again, we were taking from them, under proration, all they would make. We will probably find the same true after this experience.

I confidently believe it will be only a few months until there will be much talk of an impending oil famine.

It will be a healthy condition that enables us to reduce our crude stocks a couple of hundred million barrels. Both crude and refined oils, produced in excess of needs, is an unjustified economic waste. Conditions will correct themselves if permitted to do so.

My contention is, that had it not been for petroleum imports, increased recovery of gasoline from crude, improved quality of crude by deeper drilling and increased volume of casinghead gasoline, there would have been no distressing surplus of gasoline this year.

A healthy condition in industry is dependent upon at least a near parity between production and consumption. The possibility of controlling this parity through foreign influences is not conducive to natural operation or healthy conditions.

Legislation

Unintelligent legislation will not correct conditions in the industry. Government control or regulation would only increase present difficulties. The business is so intricate it is beyond the possibility of successful Government operation. Its speculative feature alone removes it from even the suggestion of success through official channels and the absence of personal interest and personal incentive.

I am optimistic concerning the future of petroleum. I am in no sense an alarmist. But every student of petroleum is familiar with the fact that all down the history of the business there has always been a lapse between great gusher pools. This period of unparalleled petroleum yield is likely to be followed by months of searching for new pools.

The question arises: Can we hope to continue to increase recovery of gasoline from crude oil during this time as we have the past two or three years; and may we expect to improve the quality of crude as we have done in the recent past, by still deeper drilling, and meet the demand for gasoline until new gusher pools are found?

Will Draw on Reserve

Without attempting to prophesy, I can see how it is more than likely we will draw heavily upon our crude reserve supply and exert ourselves to the utmost to meet demands, while the cry goes up of threatened famine and shortage of motor fuel oil.

However, I hasten to reaffirm my contention that before there is an actual shortage or inability to meet every demand of the public, the oil industry will go out into the highways and byways of America and find new fields.

I do not hesitate to say, however, I believe it is incumbent more upon the automobile industry to lengthen out the supply of gasoline by the construction of better cars and more upon the country by the construction of better roads to increase mileage, than it is to agitate for lower prices for gasoline, thus hampering, without information and unwarrantedly, an industry upon which the automobile industry is absolutely dependent.

It is significant that in England, automobiles are attaining as high as 50 miles per gallon of gasoline, and this is no uncommon thing. It points to the greater duty and responsibility of American manufacturers and American road builders. We deny, most emphatically, that all the responsibility of maintaining an adequate supply of motor fuel rests with the petroleum producers and manufacturers, and the extreme cheapness of that product.

Conditions in Kansas

There are 36 refineries in Kansas. They represent an investment of approximately $37,000,000. Of this number, 20 are shut down because it is unprofitable, under present conditions, to operate.

There are, in round numbers, about

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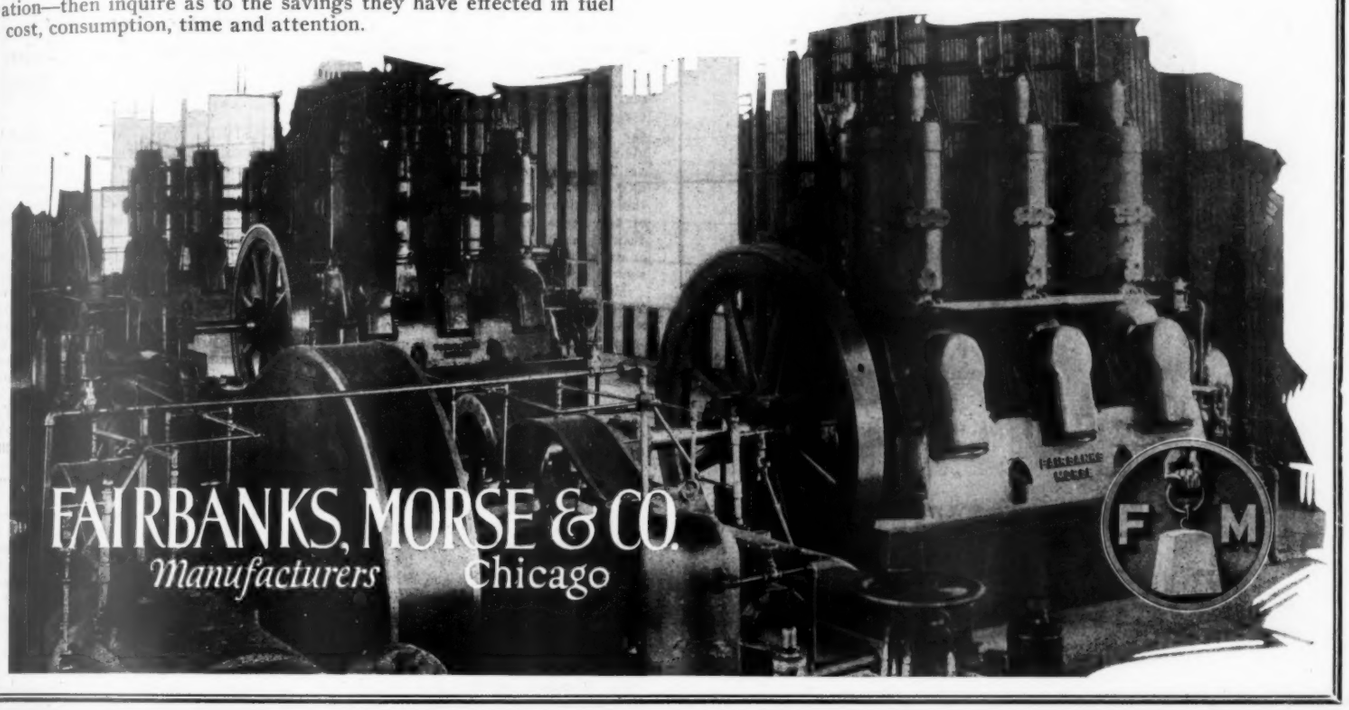

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A PROMINENT OIL COMPANY

came into our shop for a few repairs the other day.

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He also made a voluntary statement: "The wood rim is easier on belting; the belt lasts longer than on any of the others."

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THE COMPASS OF INDUSTRY
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18,200 producing wells in Kansas, with a daily accredited average of about four barrels. The average of all the wells of the United States is 5.7 bbls.; the average of all wells in California last year was 55.3 bbls.; in Oklahoma, 7.5 bbls.; in Wyoming, 53.6 bbls; in Texas, 18.5; Illinois, 1.4; Ohio, .5; Pennsylvania, .3; and West Virginia, .9.

You will note from these figures the price of oil is highest where the output of wells is smallest. On this theory, the price of crude in Kansas is too low compared with other States. Freight rates are unfair to the Kansas manufacturer.

The Kansas refiners who usually operate, under normal conditions, require 60,000 to 70,000 bbls. of crude a day. The total daily production of Kansas, for the last year or two, has varied from about 72,000 bbls. a day, present reported yield, to approximately 90,000 bbls. a day. As part of this output goes to the big pipe lines and is transported out of the State, part of the needs of these Kansas refiners must come from other sources. To compete, it is necessary to secure the best grades of crude.

Present posted prices of crude are: 90 cents for all grades under 33 gravity; $1.30 for all grades 33 gravity up to 39.9; and $1.75 a bbl. for 40 gravity and above. Refiners insist there is no justification for the posted difference between 39 gravity and 40 gravity, and even if the pipe line companies do not take any of the latter grade, the posted price makes it necessary for the refiner to pay that amount if he would secure this grade of raw material.

Difficulty of Situation

The difficulty of the situation is, the independent refiner is compelled by the producer to pay a premium. The amount of this premium varies according to the stress of the refiner, amounting sometimes to 50 cents or more a barrel. If these refiners pay 25 cents a barrel premium, it means an added expense of $5,630,000 a year. If the premium is 35 cents, it means an increased annual cost to Kansas refiners of $7,882,000; if 50 cents premium, an added cost of $11,260,000. This in addition to other disadvantages of the independent.

Kansas refineries are well built. For the most part they are of modern construction; most of them have been equipped with the latest inventions for higher distillation. Kansas refining companies have acquired distribution facilities and are able to manufacture gasoline and other products comparatively as cheaply as other companies where conditions are equal. Kansas refiners have a reputation for the high quality of the goods they offer the public.

There is close competition in marketing. The dominant companies are jealous of their markets, and the independent knows if he deviates, it means a reduced price.

Four things militate against the independent:

(1) He must pay premiums.
(2) Freight rates are against him.
(3) He has nothing to do with making of the purchase price of his raw material or the sale price to the public of his finished product.
(4) He is practically compelled to sell his output to the independent distributor on a marginal contract of guaranteed profit. The misuse of these profits results frequently in disturbing conditions and often distorts actual conditions in the mind of the public.

Corrective measures are extremely difficult where conditions are so peculiar as they are in the oil industry. Oil bristles with angles, every one of them loaded with dynamite. But I do not know of any legislation, except that which might affect transportation, which could bring relief to the oil industry. We cannot legislate to compel a producer to sell his oil to any particular person at any particular price. It would probably be considered against public policy to attempt to regulate the price at which the jobber should sell to the public. You would destroy the oil industry if you attempted to regulate profits in it, because of its necessarily highly speculative character. Sight should not be lost of the fact there is no such thing as a fixed standard of cost of producing oil anywhere in the United States. It is an impossible thing. Nor should we lose sight of the fact that almost invariably every oil pool is preceded and followed by the loss of millions of dollars, first, in discovering the pool, and, second, in determining its boundaries.

Secretary Cancels Homesteading Claim In Oil Field Town

CASPER, Wyo., Oct. 20.—A decision of considerable interest to the oil men was handed down by the Secretary of the Interior in which that official decided adversely against Louis Lavoye regarding a homestead claim in the Salt Creek Field.

Lavoye took up a homestead on the present site of the town of Lavoye, in the heart of the Salt Creek Field, and established residence thereon as required by the homestead regulations, which provide that a homesteader may take up any open lands for homesteading purposes but the simple homestead takes in only the surface rights and no minerals.

The Ohio Oil Co. and the Boston-Wyoming Oil Co. already had mineral claims covering the petroleum under the tracts designated by Lavoye as his homestead, and these firms objected at once to Lavoye obtaining title to the surface because the oil companies claimed that such a homestead right, if granted, would interfere with the operation of their properties and the taking of the petroleum content from the ground. It was further claimed that Lavoye did not intend to farm the surface, but merely wished to obtain title so he could lay it out in town lots and engage in real estate transactions.

The oil firms state that the tendency of such town lot sales is to gather undesirable characters together which makes for trouble on that particular part of the holdings of the oil firms and in an effort to eliminate this trouble, the oil men have objected strenuously to homesteaders entering upon lands in the oil fields after production has been developed.

Secretary Work in his decision stated that the land was not vacant public land at the time of the homesteader's entry and was therefore not open to entry under the homestead laws, so the homestead entry is null and void. However, the claimant, Lavoye, is carrying the case up for a decision by the Supreme Court. This decision affects a large number of like homestead filings over the Salt Creek Field which were made by people who hope to obtain titles to the surface and sell the land for its real estate value. Lavoye townsite is a thriving village at present of about 500 inhabitants and the residence of many field workers in the central part of the field.

OIL GROUPS IN POLAND

All oil firms in Poland can be divided into three groups: Producers, refiners and producers-refiners. The last named group, those who at same time possess oil mines and are oil refiners, are the most numerous and financially strong. Over 70 per cent of the total crude oil production in Poland is represented by this group.

POSTPONE ASSIGNED CAR ORDER

WASHINGTON, Oct. 22.—The Interstate Commerce Commission has again postponed the effective date of its order abolishing the use of assigned cars to bituminous coal mines from November 1 until December 1, 1923. At the same time, the commission announced that the proceeding would be reopened for further hearing before Commissioner Aitchison at Washington October 22.

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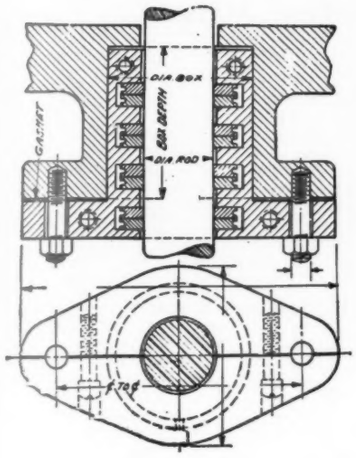

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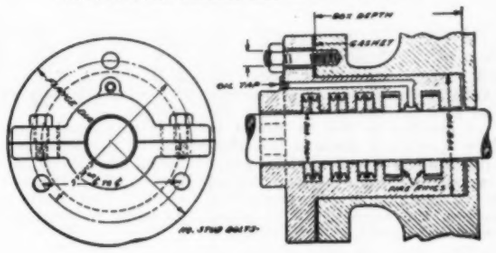

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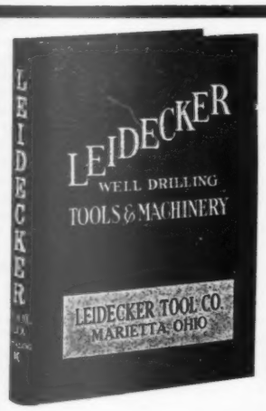

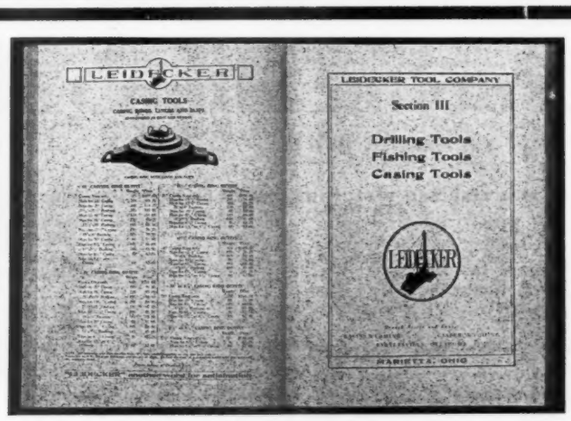

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Gulf Independents Big Factor in East

"Old Line" Marketers Have Considerable Competition Now. More Discussion of the Standard Oil of Indiana-Gulf Merger

By N. O. Fanning

NEW YORK, Oct. 22.—When the Gulf Refining Co. announced a reduction of from 2 to 3 cents per gallon in the price of gasoline in the 24 States in which it operates it threw a bombshell into the Atlantic Coast markets which was a reminder of the one hurled by the Standard Oil Co. of Indiana not so long ago. Of course the Gulf's reduction was not so drastic, but it was just as effective, from the point of view of this market, in as much as the new price is 15½ to 16½ cents per gallon, tank wagon basis, or just half the price which existed at the beginning of 1921, only three years ago.

The rapidity with which the company's action was followed by the other marketers calls attention to the remarkable changes that have been brought about in the Atlantic Coast competitive situation since the World War. The "old-line" marketers—Standard Oil of New York, Standard Oil of New Jersey, Atlantic Refining and Standard Oil of Kentucky, which lined the territory from Maine to Florida—who were facing small competition at that time, now have their hands full to hold on to their trade. Their greatest asset is the good will which they built up during their years of operation in this territory.

Gulf Operators Big Factor

On the other hand, the great independents, rising out of the Gulf Coast, have descended on this market, the richest in the world, with their vast resources. The Gulf Refining Co. is an outstanding example of the strides made by these concerns in the last five years. Credited with being the largest producer of crude oil in the United States, Gulf Refining presents an iron-clad front in its marketing operations. It has command of what might be called unlimited supplies of high grade oil at practically the cost of production, and with its adequate transportation organizations, can lay that crude down at its refinery, one of the best located in the world, at a minimum cost.

Gulf Refining has not gone into the science of "cracking" to any great extent, but has a strong and modern refining organization. Backing this is its great fleet of oil tankers, the prime agency for carrying refined oil to the Atlantic Coast.

It may surprise some to know that the Gulf Refining Co. is one of the three or four largest marketers of gasoline on the Atlantic Coast. The importance of this branch of its business is indicated by the fact that it is estimated to ship some 40,000 bbls. of refined oils to Atlantic ports every day during the summer season. The Gulf Refining's activities in this territory range from Maine to Florida, and this is where it gets its great barrelage of business—not by attempting to concentrate its activities in one small area.

At the same time, the company's marketing policy is that of keeping its activities as near seaboard as possible, within easy reach of its terminals on the coast, and of pounding away at a given market further away from its distributing stations. In that way the maximum of sales are obtained at minimum expense.

Colonel Stewart in Background

In many quarters the recent action of the Gulf Refining Co. in initiating a drastic cut in gasoline prices on the Atlantic Coast is regarded as reminiscent of the aggressiveness displayed by Colonel Stewart's organization, the Standard Oil Co. of Indiana. Coupled with this the knowledge that Colonel Stewart is anxious to gain control of the Gulf Oil Corp., a big merger is scented off in the background.

With Colonel Stewart in virtual control of the Sinclair and Gulf organizations, the old-line Atlantic Coast operators might well have something to think about. That would mean Standard of Indiana's good will in the Middle West; its control of the Rocky Mountain Field; Sinclair Crude Oil Purchasing Co.'s pipe lines to and from the Rocky Mountain district, the Mid-Continent Field, the Middle West and Gulf Coast; with Sinclair's oil tankers and Mexican properties and refineries on the Atlantic Coast—and all of this backed by the Gulf's immense production in the United States and Mexico, its prospective producing properties in Venezuela and Colombia, and its great fleet of oil tankers—to say nothing of its good will in the Southwest and wherever else it markets.

The foregoing, all in one organization, would involve assets of more than $1,000,000,000, thus rivalling those of the Standard Oil Co. of New Jersey.

The Mellons a Factor

If it had not been for the fact that the stock of the Gulf Oil Corp. is closely held, being largely controlled by the members of the Mellon family, Pittsburgh's greatest industrialists, this dream which has been credited to Colonel Stewart might have been realized some time ago. In order to effect control of the Gulf organization, Colonel Stewart must deal directly with the Mellons and with no other person or persons. It is doubtful whether the Mellons, in view of the great success they have attained with the Gulf Oil Corp., would be disposed to take a secondary position in its affairs by selling the bulk of their holdings, no matter at what price, unless they actually wished to retire from the oil business, in view of their other large interests.

On the other hand, Colonel Stewart's aggressiveness is well known. Furthermore, he has on his side the knowledge that a great organization can operate on a more economical basis than a smaller one, hence the economic justification of mergers. This means lower prices for petroleum products to the consumer, and, probably, the squeezing out of numerous smaller operators.

A Standard of Indiana-Gulf-Sinclair merger is by no means an impossibility.

Atlantic Coast Market Goal

The Atlantic Coast oil markets have long been the goal of the largest Gulf Coast independents, such as Gulf Oil, The Texas Co. and others, and it is not going too far to say that the interest displayed by them in this territory is fully justified. The Gulf Refining Co. with its Gulf Coast refineries, its large production and big tanker fleet, has, perhaps, a slight edge in its success here.

While the Middle West is the largest gasoline consuming area in the country, the Atlantic Coast market can boast larger consumption in smaller area, which, from an operating viewpoint, gives the greater advantage. Furthermore, the Atlantic Coast district excels in consumption of lubricants and fuel oil, to say nothing of many of the lesser products of crude.

As yet assaults on the Atlantic Coast markets by companies other than those having Gulf Coast or Atlantic Coast refineries and tanker fleets have been practically fruitless. The reason for this lies in the prohibitive freight rates on oil charged by the railroads, and the cheapness with which crude oil can be carried by water as compared with pipe line transportation.

Colonel Stewart realizes that the best way to reach the Atlantic Coast territory is by way of the Gulf Coast.

To return to the Gulf's action in taking the initiative in reducing gasoline on the Atlantic Coast, it is significant as lining that concern up with Standard of Indiana in the matter of gasoline price policy, as against the policy of conservatism followed by the coastal Standard Oil units.

Effects of Policy

The effects of drastic price cutting of gasoline have been witnessed by the oil trade in former years, and are therefore well known. The small independents

(Continued on Page 86)

SUMMARY OF CALIFORNIA OIL FIELD OPERATIONS FOR SEPTEMBER, 1923

According to figures collected by the American Petroleum Institute, Pacific Coast office, the total production of crude oil in California for September amounted to 25,762,487 bbls., an average of 858,750 bbls. per day. This is an increase of 5,847 bbls. per day over August production.

Stocks increased during the month 2,372,774 bbls. The total stocks at the end of the month were 85,496,609 bbls. The total stock increase for 1923, up to September 30, was 24,311,681 bbls. Indicated consumption for September was 23,389,713 bbls., an average of 779,657 bbls. per day. This is an increase of 70,890 bbls. per day over August consumption.

Ninety-three wells were completed during the month with an initial daily production of 139,960 bbls., compared with 61 wells completed during August with an initial daily production of 118,433 bbls.

PRODUCTION

(Figures for Production and Stocks are in barrels of 42 gallons)

District—	Barrels Per Mo.	Daily Average Sept., '23	Aug., '23	Sept., '22
Kern River	570,078	19,002	19,384	20,229
McKittrick	182,096	6,070	5,945	6,333
Midway-Sunset	2,239,352	74,645	74,083	77,566
Elk Hills	689,624	22,987	22 135	26,402
Lost Hills-Belridge	115,774	3,792	3,728	6,537
Coalinga	425,950	14,198	14,406	17,258
Wheeler Ridge	15,252	509	420	.....
Watsonville	1,750	58	58	61
Santa Maria	244,835	8,161	8,603	8,434
Summerland	4,365	146	146	152
Ventura-Newhall	302,709	10,090	10 293	8,368
Los Angeles-Salt Lake	92,859	3,095	3,255	3,401
Whittier	50,049	1,668	1,698	1,855
Fullerton	338,742	11,291	11,610	10,299
Coyote	76,729	2,558	2,190	17,397
Santa Fe Springs	9,439 874	314,662	322,522	42,639
Montebello	314,689	10,490	10,718	18,643
Richfield	485,079	16,169	16,404	21,086
Huntington Beach	2,688,834	89 628	104,582	32,594
Long Beach	7,227,535	240,918	214,818	87,059
Torrance (Redondo)	222 502	7,417	5,906	624
Compton	35,803	1,193	.....	.....
Total	25,762,487	858,750	852,903	406,838
Total August	26,440,005	852,903		
Decrease	677,518	*6,847		

*Increase.

FIELD, REFINERY, PIPE LINE AND TANK FARM STOCKS OF CRUDE, RESIDUUM AND TOPS

	Sept. 30, 1923	Aug. 31, 1923	Sept. Stock Increases	Sept. 30, 1922
Heavy crude, heavier than 20° A.P.I. including residuum	42,413,027	43,696,865	*1 283,838	39,900,530
Refinable crude, 20° A.P.I., and lighter	31,584,259	29,029 198	2,555,061	†16,358,771
Tops	11,499,323	10,397,772	1,101,551	.....
Total	‡85,496,609	83,123,835	2,372,774	56,259,301
		Sept. 30, 1923	Aug. 31, 1923	Sept. 30, 1922
Total quantity of above products held at refineries		‡26,660,833	21,953,777	9,617,681
Total quantity of above products held in fields, pipe lines and tank farms		‡58,835,776	61,170,058	46,741,620
Total stocks, as above		85,496,609	83,123,835	56,259 301

*Decrease. †Includes tops. ‡About 3,000,000 bbls. previously reported as pipe line stocks are this month, and in the future will be classified as refinery stocks.

DEVELOPMENT

District—	New Rigs Up	Active Drilling	Comp.	Daily Init. Output	Active Prod.	Abd.
Kern River	...	1	...	.....	2,130	...
McKittrick	2	6	...	.....	283	...
Midway-Sunset	18	42	12	3,137	2,141	7
Elk Hills	...	9	2	1,380	88	...
Lost Hills-Belridge	...	6	...	.....	251	2
Coalinga	...	9	...	.....	679	1
Wheeler Ridge	3	7	1	185	5	...
Watsonville	...	...	...	.....	6	...
Santa Maria	...	3	...	.....	327	1
Summerland	...	...	...	.....	135	...
Ventura-Newhall	...	31	2	320	541	2
Los Angeles-Salt Lake	...	...	...	.....	634	4
Whittier	...	...	...	.....	175	...
Fullerton	...	5	...	.....	384	...
Coyote	...	4	...	.....	96	...
Santa Fe Springs	17	132	30	76,711	232	7
Montebello	...	8	...	.....	122	...
Richfield	1	11	1	26	179	...
Huntington Beach	4	91	9	2,289	214	5
Long Beach	22	256	31	50,916	266	4
Torrance	31	61	4	3,747	33	...
Compton	3	10	1	1,250	1	...
Miscellaneous drilling	3	62	...	.....	....	6
Total September	104	805	93	139,960	8,922	37
Total August	75	803	61	118,433	8,882	16
Increase	29	2	32	21,527	40	21
Average for year 1922	115	605	67	43,700	9,410	17
Average for year 1921	90	536	57	15,631	9,425	14
Average for year 1920	77	403	49	14,195	9,209	11
Average for year 1919	53	340	47	9,572	8,774	18
Average for year 1918	50	362	50	10,577	8 210	13

Bound for Holland

The gas is so completely separated and conducted away from the oil that the danger from lightning or other sources of ignition or combustion is greatly reduced.

AN EXPORT SHIPMENT

The fame of the Smith Separator is reflected in foreign shipments, as well as by an increasing popularity in this country.

It protects your well, your oil and all the property on your lease—against lightning, and reduces the risk of fire from any source.

Besides its earning power the Smith Separator is the greatest safety device you could have on your lease.

SMITH SEPARATOR COMPANY
TULSA, OKLA.

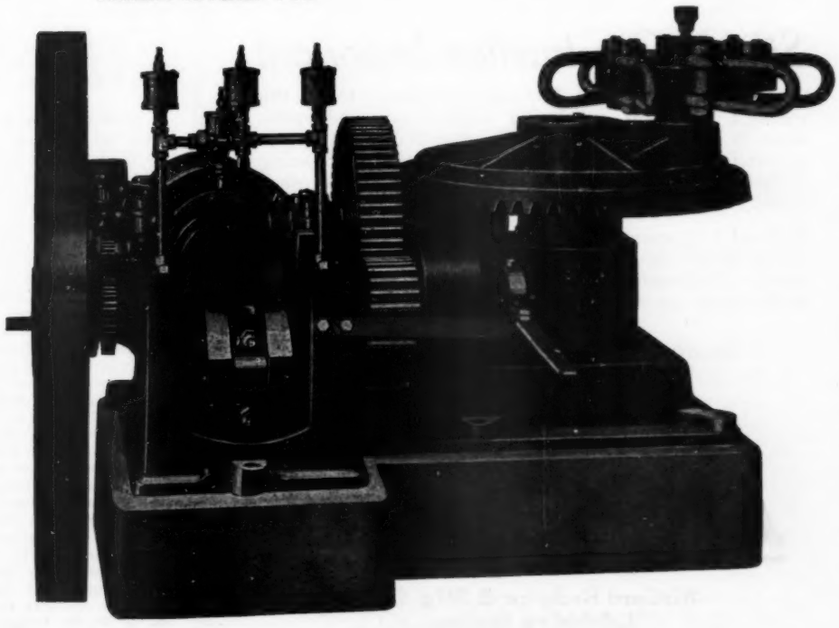
New Type Combination Geared Power

PATENT APPLIED FOR

MANUFACTURED IN TWO SIZES

With 8 H. P. and 12 H. P. Four-Cycle Gas Engine

Equipped with magneto ignition, far superior to old style combination power that requires swings to hook on wells. Eight H. P. will handle six 1,000-foot wells, when balanced. Weight 2,100 lbs. 12 H. P. will handle ten 1,000-foot wells, when balanced. Weight 4,300 lbs. These units are self contained and can be set on wood or concrete foundations.



The Pattin Brothers Company
Main Office and Works: Marietta, Ohio

Branch Warehouse and Office: Tulsa, Okla., Wichita Falls, Texas **Carried in Stock by Frick & Lindsay Co., in Kentucky**

McCORD

FORCE FEED

LUBRICATORS

Make for Reliability

Being on the job is of first importance in the oil industry. McCord dependable force feed lubricators help maintain that reliability so necessary to the successful operation of equipment in the oil field.

Oil is the Life of an Engine

McCord Lubricators feed live oil and feed it only once thus making for long life and continuous service.

Simple Construction Important

Comparison proves the McCord Lubricator to be the simplest lubricator in design construction and operation. It is built up in units. Each pump is complete within itself and may be removed for inspection or cleaning without disturbing the feed or regulation of the other units.

McCord Lubricators are in successful operation in practically every American as well as as many foreign oil fields. They operate with just as complete satisfaction in the arctic, as in the tropical regions.

Specify McCord Lubricators for reliability

Sold by
National Supply Company
Branches

McCord
LUBRICATORS

McCord Radiator & Mfg. Co.
Lubricating Division
Detroit

Manufacturers also of McCord & McKim Gaskets and McCord Automobile Radiators

EASTERN FIELDS

(Continued from Page 44)

& Son on the northwest corner of the County, the Allegheny Oil Co. completed and shot in the Berea grit No. 16 on the J. McDonald farm. It will be good for 15 bbls. a day.

Knox and Noble Counties

In Section 33, Harrison Township, Knox County, I. J. Denbow & Co. have completed and shot No. 24 on the George Miller farm. It is a 5-bbl. pumper. In Section 3, Clay Township, Cora Clark has started to drill a second test on the Grover Hoss farm. In Jackson Township, Noble County, Beeson & Athey have a very light pumper in the Macksburg 500-foot sand at No. 3 on the Hupp-Murray farm. In Section 24, Lawrence Township, Washington County, W. A. Decker has a light pumper in the Cow Run sand at a second test on the Charles Somon farm. In Newport Township, Otis Reckard & Co. have started to drill another test on the Ella A. West farm. In Section 28 Ward Township, Hocking County, the Ohio Fuel Supply Co. has started to drill another test on the Job Dawley heirs' farm. In Section 13, Brown Township, Knox Couty, the East Ohio Producing & Refining Co. has completed a second test on the Gustave Snively farm. It is good for 6 barrels a day in the Berea grit.

Washington County

In the Warner district, Salem Township, Washington County, Minch & Schramm have drilled a test on the Herman Schramm farm through the first Cow Run sand and not good for more than 2 bbls. a day. In the same district, W. W. Meister & Co. have a still smaller well in the same formation at No. 16 on the Theobold Daniels farms. In the Macksburg district, Aurelius Township, Orton C. Dunn & Co. have now drilled their test on the Charles Hutchins farm through the Berea grit., It is dry in all sands. This location is 1,500 feet east of production on the A. J. Longfellow farm. In Section 11, Washington Township, Monroe County, the Carter Oil Co. has started to drill a test on the Isaac McVey farm. In Liberty district, Washington County, C. R. Smith & Co. have a 10-bbl. pumper in the Maxon sand at No. 3 on the Ida M. Archer farm. In Franklin Township, Licking County, Ralph Bros. completed a second test on the Savilla C. Parr farm. It is good for 2 bbls. a day in the Berea grit. In Section 3, Wheeling Township, Belmont County, T. J. Reese & Co.'s test on the John Frazier farm is dry in the Berea grit.

Good Producer in West Virginia

For the first time in a number of weeks the West Virginia fields have come to the front with a fair producer. It is the Pure Oil Co.'s No. 220 on the Williams Coal Co.'s tract, located on Joes Creek, Sherman District, Boone County. It has been drilled through and shot in the Berea grit and is good for 150 bbls. a day. The location is 700 feet southeast of production. The Pure Oil Co. has had phenomenal success in developing this tract. This is a record seldom, if ever surpassed in the Eastern fields. On Coal River, in the same district, the same company has completed No. 9 on the Lafollette, Prichard & Robson tract B. It is showing for a 12- or 15-bbl. pumper.

On Two Lick Run, Reedy district, Wirt County, the Rex Pyramid Oil Co. has now drilled its test on the A. T. & C. A. Carrothers farm through the Berea grit. It is a duster. In Clay district, E. H. Lockhart & Co. have drilled No. 7 on the J. C. Hale farm through the Big Injun sand and dry. On Rock Camp run, of Tanners Creek, DeKalb district, Gilmer County, C. W. McCall & Co. have a gasser in the Big Injun sand at a test on the W. W. Wright farm.

Gassers in Cabell County

On Little Two-Mile Creek, Grant district, Cabell County, the Commercial Gas Co.'s test on the Albert McCallister farm is a fair gasser in the Berea grit. On the same stream and in the same district. the Aetna Oil & Gas Co. is drilling a second test on the R. W. Williams farm. On Rich Creek, Wayne County, the Columbia Gas & Electric Co. is drilling on the Guyandott Land Association property. On Charley's Creek, Grant district, Cabell County, the Harshbarger Oil & Gas Co.'s test on the J. T. Blackwood farm is a gasser in the Big Lime formation, estimated to be good for 1,500,000 feet a day. In the same district, on Mud River, the Commercial Gas Co. drilled a test on the W. R. Williams farm.

Better Than Average

In New Milton district, Doddridge County, Trainer & Travis have completed in the Big Injun sand a second test on the Frank Ables farm. It is good for 25 bbls. a day, which is better than the average size of the wells in that district. In the same district, the Raccoon Oil & Gas Co. has a 3-bbl. pumper in the same formation at No. 3 on the James Kelley heirs' farm. On Plum Run, Lincoln district, Marion County, the Peerless Oil Co. has drilled its test on the Martha Wallace farm, through the fifth sand and showing a little oil. It will be given a shot and tested. In Courthouse district, Lewis County, Rinehart & Turner have drilled a test on the John Hopkins farm through the Gordon sand and good for 10 bbls. a day. This location is 2,000 feet northeast of the Shea Oil Co.'s test. In Clay district, Monongalia County, the J. H. McDermott Oil Co. drilled No. 8 on the Price heirs' farm through the Bayard sand and not good for more than 2 bbls. a day.

Small Well in Ritchie County

On Indian Creek, Murphy district, in Ritchie County, Grove & Parrish have a 10-bbl. pumper in the Big Injun sand at No. 7 on the A. W. Smith farm. In Clay district, the Philadelphia Oil Co. has drilled its old Maxon sand well on the A. O. Wilson farm to the Squaw sand. It is a 2-bbl. pumper in the lower sand. On Lick Fork, Grant district, W. H. Jonas has drilled his No. 13 on the West Virginia tract, through the Berea grit. It is a very light pumper. In Jefferson district, Pleasants County, W. D. Meister has a very light show of oil in the Cow Run sand at his No. 15 on the S. White farm. In Grant district, E. S. Briggs has a duster in the same formation at a test on the A. Dunbar farm. In Clay district, Wood County, the Continental Oil & Gas Co. got a 2-bbl. pumper in the Berea grit at a test on the S. H. Alleman farm. In Taggart district, L. Bickel & Son are drilling a wildcat on the Bradley Neal farm. In DeKalb district, Gilmer County, the Laurel Creek Oil Co. has the rig completed for a test on the L. M. Wagner farm. On Rock Camp Run, Spencer district, Roane County, the Federal Oil & Gas Co. is drilling on the Roberts, Pell & Newman farm.

In Grant district, Ritchie County, David French & Co. have a duster in the Big Injun sand at an old well drilled down on the Jehu Ross farm. In Union district, the Hope Natural Gas Co.'s test on the John M. Summers farm is a duster in the Berea grit. The Pyramid Oil & Gas Co.'s test on the A. T. C. A. Carruthers farm is dry in the same formation. In Clay district, Earl Lockhart found the Big Injun sand at No. 6 on the Mamie E. Hale farm. In Union district, Lincoln County, the Huntington Development Gas Co. got a gasser in the Big Injun sand at a test on the G. C. Scites farm. In Curry district, Putnam County, the Laurel State Gas Co.'s test on the W. I. Kennard farm is a gasser in the same formation. In Grant district, Wetzel County, the Carnegie Natural Gas Co. has a fair gasser on the J. W. Huey farm. The Penn-Royal Oil Co.'s second test on the Taylor heirs farm in Sheridan district, Calhoun County, is a gasser in the salt sand. In the same district, the Richtor Oil Co.'s second test on the Z. O. Cooper farm is a gasser in the same sand. In Geary district, Roane County, the United Fuel Gas Co. has a gasser in the Big Injun sand on the J. G. Myers farm.

Duster in Marshall County

In Liberty district, Marshall County, the Blake Oil & Gas Co. has a duster on the Blake farm. In Mannington district,

Marion County, the Eastern Petroleum Co.'s test on the Campbell heirs' farm is showing for a gasser in the 50-foot sand. The Wetzel Gas Co. has completed a salt sand gasser at a second test on the G. Fordyce farm in Clay district, Wetzel County. In Otter district, Braxton County, the Philadelphia Co. has a dry hole at a test on the H. W. Moyer farm. In Glenville district, Gilmer County, the Carnegie Natural Gas Co. has a Big Injun sand gasser on the Conner heirs' farm. In Courthouse district, Lewis County, the Hope Natural Gas Co. has a fifth sand gasser on the Louisa John farm. The same company's test on the A. J. Whitesell farm is a gasser in the Gantz sand. In the same district, the West Virginia Central Gas Co. got a gasser in the same formation at a test on the J. R. Roach farm. On Tait Run, Grant district, Ritchie County, W. H. Jonas has a very light pumper in the Berea grit at his No. 13 on the West Virginia tract.

Drilling and Starting Tests

The gas companies are the most aggressive searchers for new territory at this time. In Birch district, Braxton County, the Philadelphia Gas Co. is drilling on the Lewis Bennett heirs' farm. The same company is rigging up on the T. R. Stump farm and has made locations on the Henry M. Hamrick and Thomas Christian farms. In Otter district the Hazel Atlas Gas Co.'s second test on the Amanda Gerwig farm is a gasser in the Big Injun sand. In Birch district, the Mill Fork Oil & Gas Co. has gone back to its old No. 3 on the C. R. Bourne farm and drilling it to the lower sands. In DeKalb district, Gilmer County, Clem Morris & Co. are starting on the Roberts Bros.' farm. The Manufacturers Light & Heat Co. has made the location for a second test on the Mary E. Courtwright farm in Liberty district, Marshall County. The same company is building a rig on the Frank Chambers and Milton McCluskey farms. In Meade district, the Appalachain Oil & Gas Co. is starting a second test on the Henrietta Crow farm. In Liberty district, Clue Bros. have started to drill on the J. W. Mason farm. In the same district, the Lynn Camp Oil Co. is drilling at 1,400 feet on the Thomas Blake farm.

New Tests for Marion County

In Mannington district, Marion County, William Haught is building a rig on the F. M. Renner farm. In the same district, S. N. Elliott is building a rig on the L. A. Orndduff farm. In Clay district, Wetzel County, the Pittsburgh & West Virginia Gas Co. is rigging up on the J. J. Ferrell and Dressa Sellers farms. Trainer & Summers have started to drill on the Paul Allen farm, in New Milton district, Doddridge County. In Washington district, Calhoun County, the Home Oil & Gas Co. has shut down for water on the W. & C. Jarvis farm. In Smithfield district, Roane County, G. L. Cabot is rigging up on the O. C. Ferrell farm. In Spencer district, the Ohio Fuel Supply Co. has made a location on the Bowman Summers and Sarah A. Craig farms. In Center district, Calhoun County, the Hope Natural Gas Co. has started to drill on the Alonzo Ruck farm. In Sheridan district, Martin Crawley has started to drill on the Patrick Mitchell farm.

Hope's Deep Well

The Hope Natural Gas Co. has again started to drill at its well on the Volcanic tract in Walker district, Wood County. There has been much delay at this well on account of caving. At a depth of 4,580 feet they bailed the well for a number of days but failed to clear the hole. It was then decided to cement the cave and after it had set drill through the cement. It was several weeks before they could start to drill again and found no trouble after this and are now drilling at a total depth of 5,151 feet, in very soft formation. They poured 1,350 sacks of cement into the well, mixed in the proportion of two sacks of cement to one of sand. If no further trouble is experienced they expect to get the Oriskany sand, the producing formation in another deep test, in a few days.

W. KENTUCKY-TENN.

(Continued from Page 52)

Creek about 4 miles southwest of Tompkinsville. This location is 5 miles south of the wells on the Turner farm and 2 miles west of the Newt Ray gas wells.

The Star Oil Co. encountered gas in No. 1 Terry Humble, on the waters of Big McFarland Creek, at the shallow depth of 60 feet that forced them to shut down drilling operations until a separate boiler could be obtained.

Fred Hensgen and associates have spudded in on their No. 1 location on the Kidwell lease, on waters of Big Sulphur Creek, 6 miles northwest of the Kettle Creek Pool.

Da Foe and others are drilling at 325 feet on No. 2 Williams in Tinsleys Bottom in Clay County, Tennessee. Equipment for four wells has been placed on the ground and tanks are being erected to take care of possible production. No. 1, drilled four years ago, after being cleaned out made 20 bbls. It was drilled to around 700 feet. The Union Oil Trust, drilling within the corporate limits of Celina, Clay County, struck a heavy flow of gas at 285 feet. Indications of oil were also encouraging. The Neeleys Creek Oil Corp. is spudding in No. 1 Daly, near Neeleys Creek. M. N. Sayls and others are making hole at 243 feet on the Widow Hargrove farm near Willow Grove.

Other Completions

Allen County—Turner & English's No. 2 W. L. Motley, 3 bbls. at 379 feet: West Penn Syndicates' No. 1 T. L. Bran No. 2 Farm, dry at 279 feet; J. Pruitt Hall's No. 213 Bettie Erwin, 5 bbls. at 290 feet; R. E. Wilson's No. 3 Fee, 10 bbls. at 312 feet; White Plains Oil & Gas Co.'s No. 16 T. Buchanon, 4 bbls. at 332 feet; same company's No. 4 J. W. Frost, dry at 429 feet; Hickory Hill Oil Co.'s No. 3 J. M. Pearson, dry at 530 feet.

Barren County—Bryner Oil Co.'s No. 3 Taylor, 4 bbls. at 443 feet. Sand from 421 to 431 feet shot with 20 quarts; Norris Bros. & Sampson's No. 5 Berry, 13 bbls. at 486½ feet.

In Hopkins County, the Copper Flash Oil Co. completed its No. 5 on the Holliman farm in the shallow pay. It made 57 bbls. the first 15 hours. No. 6 is spudding.

LULING TESTS WEST CENTRAL TEXAS LIME

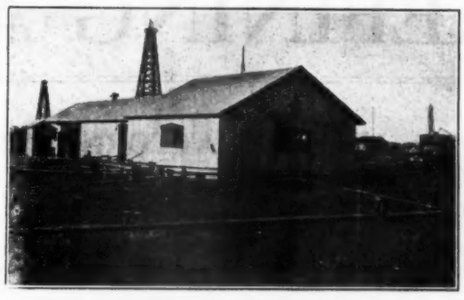
(Continued from Page 58)

cerns are considering portable rigs but none has been introduced. A few of the wells have had initial output of 10,000 barrels. Such output, however, did not continue for long. Luling wells as a class are expressed in hundreds rather than thousands. Lack of ample outlet so far has made it impractical to allow wells to produce at their maximum.

Since it has been impractical to let many of the wells flow at their natural rates, there has so far been no need for shooting in the field. Success of nitroglycerin in other lime fields makes it likely that the "shot" will some day be a common practice, if not with Luling, at least in other porous lime rock fields to be defined over this area of Texas.

Development at Luling is under the direction of a few concerns and individuals. The United North & South Oil Co. holds the bulk of the proven area. Other producers are the Beauchamp Petroleum Co., the Caldwell Oil & Gas Co., the Seals Creek Oil Co., the Grayburg Refining Co., the Magnolia Petroleum Co., the Royal Oil Co., the Texas Drilling Co., the Overton Drilling Co., the Evans Oil Co., the Prairie Lea Production Co., and the C. C. Cannan interests.

Luling gives promise of being only a small oil pool, small in both area and in total production. But as a factor in the opening of a vast area of the Balcones Fault section of Texas it is a field of prime importance.



Power House in Hewitt Field from which an 18' Reid Power handles nineteen 2,000' Wells

Well Done

Fidelity's a virtue that enobles
E'en servitude itself.
—*MASON.*

NOW AND then some man or some aggregation of men invents a boon to industry, protects it with basic patents granted by a benevolent government, and promulgates it through the years.

Others may come and go with imitations, but they are neither fired with the inspiration of creative genius nor urged by the necessity for maintaining a standard.

In the Hewitt Field, on the Dillard Farm in Section 22-4-2, operated by Messrs. Westheimer & Daube, is an 18' Reid two-eccentric All Metal Band Wheel Power, driven by a 70 h.p. gas engine.

This Reid Power is now handling nineteen 2,000' producing wells scattered about a 120-acre lease. Our engineering crew installed it approximately one year ago, and no repairs or replacements have been made.

Not many powers of this size in the Mid-Continent Fields are handling so heavy a load with never a backward look.

But Reid Powers are noted for faithful service over long periods of time. They are built to the world's highest standard by men fired with the inspiration of creative genius. They are made not only to sell but to serve.

In Oil Country Equipment—the most HUMAN Organization in America

Frick-Reid Supply Co.

Tulsa, Okla. Pittsburgh, Pa.

West of the Mississippi—Stores Everywhere

REFINING AND MARKETING SECTION

New Orleans Uneasy At Price Conditions Following Reduction

By W. H. Reed

NEW ORLEANS, La., Oct. 22.—Refinery prices of gasoline have not fallen in this market since the recent 2-cent reduction in filling station price. Most marketers are quoting New Navy delivered New Orleans, everything paid, in tank cars 9½ to 9¾ cents. This puts the refinery price at approximately 8 to 8¼ cents.

Considerable uneasiness is prevalent as to the outcome of the present price condition. W. O. Hudson, president of the Marine Oil Co., and a director of the National Petroleum Marketers' Association, is quoted to the effect that current prices mean the ruin of independent refiners in the South, saying jobbers should stand by the refiners at this time and help them carry the burden.

Jobbers are generally uneasy as to their ability to maintain a source of supply at margins that will permit them to stay in business. The Mexican Petroleum, New Orleans Refining, Caddo Central, Shreveport Producers and Refiners, Louisiana Refining and Chalmette companies have been supplying most of the jobbers in the Southeast. The larger companies are understood to have marginal contracts with most of their accounts. Those jobbers that have no contracts and are forced to buy in the open market complain they cannot stay in business at current prices.

Gasoline is selling at filling stations here at 14½ cents, since the Gulf Refining Co. early last week reduced prices 2 cents. The Standard, Texas, Liberty and Mexican Petroleum companies immediately met the Gulf's reduction.

Bunker fuel oil, grade "C," stiffened in price 10 cents per barrel last week, marketers asking $1.30 for this grade delivered by barge in the harbor. Prices quoted the week before were as low as $1.15, although the larger companies generally asked $1.20.

Shipments have been fair this month. The volume of incoming oil has originated at Tampico, although several big shipments of California crude have been received. Mex. Pet., New Orleans, and Standard are reported to be running West Coast oil as well as Mid-Continent and Mexican crudes.

Gasoline and fuel oil have been the strongest of petroleum products exported this month. Several coastwise shipments are reported. Of particular interest from an export standpoint was the movement of two cargoes to Alexandria, Egypt.

Shipping records so far this month to date are as follows:

Imports of crude—50.000 bbls. from Tampico to East Coast Oil Co.; 64,018 bbls. from Tampico to Asiatic Petroleum Co.; 42,000 bbls. from Tampico to Sinclair Refining Co.; 57,218 bbls. from Tampico to Asiatic Petroleum Co.; 75,000 bbls. from Los Angeles to Huasteca Petroleum Co.; 93,000 bbls. from Los Angeles to Huasteca Petroleum Co.; 37,000 bbls. from Tampico to Standard Oil Co.; 43.000 bbls. from Tampico to Standard Oil Co.; 86.000 bbls. from Los Angeles to Standard Oil Co.; 20 000 bbls. from Tampico to Huasteca Petroleum Co.; 52.000 bbls. from Tampico to Huasteca Petroleum Co.; 50.000 bbls. from Tampico to Asiatic Petroleum Co.; 75 000 bbls. from Los Angeles to Huasteca Petroleum Co.; 46.000 bbls. from Tampico to Standard Oil Co.; 91,000 bbls. from Los Angeles to Huasteca Petroleum Co., and 35.000 bbls. crude from Tampico to Huasteca Petroleum Co.

Exports—70.000 bbls. fuel oil to Boston; 950.000 gallons gasoline and 935,000 gallons gas oil to Tampa.; 2.500 tons gasoline to Liverpool; 2.604.585 gallons gasoline to London; 9,000 tons fuel oil to London; 15 000 bbls. fuel oil to Tampa; 80 000 bbls. fuel oil to New York; 2 331.860 gallons fuel oil to London; 7.300 tons fuel oil to Alexandria, Egypt; 2.690.392 gallons topped Mexican oil to Buenos Aires; 1.890,000 gallons gasoline and 882 000 gallons refined petroleum to Wilmington; 2.806.920 gallons kerosene and 297 003 gallons gasoline to Alexandria; 6.600 tons gasoline to Havre and 35,000 bbls. crude to Gulfport, Miss.

ATTORNEYS GENERAL COMMITTEE WANTS PRODUCTION CONTROLLED

By J. B. Waldo

CHICAGO, Oct. 20.—At the close of the meeting of the States' attorneys general it was resolved to continue the organization and an executive committee was formed which will lay the findings of the conference before Attorney General Dougherty at Washington. This committee has power to call future meetings. This conference adopted lengthy resolutions largely devoted to the matter of conserving the nation's resources. They ask that the National and State Governments pass new laws and enforce laws already on the statute books to that end.

It is proposed that excessive oil production be controlled and that wasteful methods be eliminated as a matter of law. The duplication of filling stations is specially mentioned as extravagant and causing excessive expense and higher costs for petroleum products to the public. It is also proposed that the Bureau of Standards, in cooperation with the Bureau of Mines and the Geological Survey, provide standards for products and that these standards be made a matter of law and compliance be enforced. Conditions in the industry are described as chaotic and blame is attached to the industry for mismanagement. The exportation of crude or its products should be restricted so far as public policy will permit, according to the attorneys general.

Resolutions Adopted

The aim of the industry, it is pointed out in the opening of the report should be an adequate continuous supply of petroleum products at the least possible cost to the public. Everything should be done to prevent waste, conserve resources and make the costs to the consumer as low as they can be made and keep the supply ample for the needs of the public and the industry in a healthy condition.

One feature of the resolutions was the paragraph devoted to pipe lines. It was declared that the pipe lines ownership should be divorced from the production and refining departments and that all pipe lines, those within one State as well as the interstate lines, be made common carriers. As such they should be obligated to furnish transportation for oil to all offering reasonable amounts of traffic, at the same price and under the same conditions.

The adjustment of freight rates was also considered and the Interstate Commerce Commission will be asked to establish such rates as will permit the producer and refiner of the Mid-Continent field to market their products in competition with other sources of supply and give them the former opportunities to do business. It was also demanded that proceedings be instituted to "terminate all combinations, agreements, unfair practices, suppression of competition, discrimination, or enhancement of prices of petroleum or petroleum products." The closing paragraphs demand that the Federal governments and the various States enact such new laws as are needed to carry out the recommendations.

Committee Named

The committee which will call on the United States attorney general and act as the executive committee of the attorneys general as a body consists of O. S. Spillman, chairman, Nebraska; George Napier, secretary, Georgia; H. L. Ekern, Wisconsin; Jay R. Benton, Massachusetts; A. V. Coco, Louisiana; John F. Rhodes, Kansas; George Short, Oklahoma; Clifford L. Hilton, Minnesota, and H. H. Cluff, Utah. Mr. Spillman issued the first call for the meeting and acted as the presiding officer.

The action of the conference was based largely on reports made by the various attorneys present of investigations into the petroleum industry in the various States and by the Senate investigating committee. The few witnesses called were asked to keep their testimony or the questions of the conference secret and not to submit to interviews. Several of the attorneys general gave out statements of what had been done in their own States, who reported that the investigations into the petroleum industry being conducted in Wisconsin have brought out the following facts:

Wisconsin's Inquiry

"About one-half the gasoline used in Wisconsin is sold by the Standard Oil Co. (Indiana.) The remainder is distributed among 200 or more so-called independent dealers. The prices charged on the part of all dealers are uniformly the same in each locality with very few exceptions. This price is based upon the Standard oil tank wagon price. The independent dealers buy a part of their gasoline on contracts with the refineries based on the Standard Oil Co.'s tank

(Continued on Page 90)

NEW PUMPING PLANT

LONG BEACH, Calif., Oct. 23.—The Petroleum Midway Oil Co.'s new pumping plant, located at Los Angeles, has been put into operation and is now relieving the pressure on the long haul lines connecting the Huntington Beach and Santa Fe Springs Fields with the Twin Harbors. The plant, in the nature of a booster plant, is equipped with six 100 horse power Fairbanks-Morse electrically operated pumps and a 10,000-bbl. tank. The plant can handle 30,000 bbls. daily.

REDUCTIONS BY CHAMPLIN

ENID, Okla., Oct. 23.—The Champlin Refining Co., purchasers of high gravity crude in the Garber and Tonkawa Fields of northern Oklahoma, announced a 25-cent reduction from the present posted prices, effective October 19, when it declared it would pay only $1 50 for crude of 40 gravity or above. Oil up to 39.9 gravity will be purchased at present posted price for 33 to 39.9 gravity oil, which is $1.30.

TEST MAXIMUM YIELD OF GASOLINE IN CRUDE

SAN FRANCISCO, Calif., Oct. 22.—Actual tests, as a part of the work of investigation leading to an improvement in refinery practice, are now being conducted by M. P. Youker, Government refinery engineer, and M. B. Cooke, associate refinery engineer. The investigation is based on the assumption that the quantity and quality of gasoline and kerosene which may be manufactured from a given quantity of a certain crude oil depends on the methods used in refining it.

Mr. Youker is conducting a widespread investigation to determine what fundamental principles should be applied to obtain a maximum yield of gasoline from crude oil.

Three main divisions included in the investigation are as follows: First, study of the theoretical problems and development of fundamental considerations relative to fractional distillation; secondly, tests in refineries throughout the United States to substantiate the theories involved; and third, tests in a small refining unit, specially constructed for the purpose of developing new methods in refinery practice. Several actual tests have been made in a number of refineries in substantiation of the theories now held.

LAY NEW PIPE LINES IN BRISTOW DISTRICT

Several new pipe lines have been constructed recently in the Bristow district of Creek County, Oklahoma, which will facilitate the handling of crude from that area. The Wilhoit Refining Co. has put down a 2-inch line from the Pulaski Oil Co.'s properties in Sections 15-14-8, 2-14-8 and 8-15-8, to a loading rack in Section 36-16-8. Crude will be shipped by rail to the Wilhoit refinery at Joplin, Mo.

The Lorraine Refining Co. is connecting its lease in Section 23-16-7 to the Cortez Oil Co.'s lease in Section 22-16-8, where it has a line to its plant in Bristow. The Sinclair Pipe Line Co. is running oil from Township 14-8, and the surrounding country through a new 4-inch line to its pumping station in Section 2-15-8. The new line was necessary to handle Sinclair Oil & Gas Co. production in the district, due to the inability of other carriers to handle the oil following the proration movement.

The Prairie Pipe Line Co. has completed its Tiger station in Section 14-14-8 and is erecting two 3,000-bbl. tanks, putting it in position to handle an anticipated oil from the wildcat districts of southern Creek County and northern Okfuskee County as well as the new Lincoln County region.

NEW MARKETING CONCERN

CHICAGO, Oct. 23.—Henry E. Wenger, A. E. Wenger and I. A. Gessler have organized Wenger & Co., Inc., to conduct a petroleum marketing business. They were formerly connected with the Wenger-Armstrong Petroleum Corp.

NAMED DIVISION MANAGER

CHICAGO, Oct. 23.—E. S. Dwyer has been appointed division manager for the Transcontinental Oil Co. at Chicago and will direct the wholesale and retail sales work in this territory. His offices will be in the Peoples Gas Building.

When we tell you the results of cracking Fuel Oil by the Dubbs Process, we mean running the Fuel Oil raw to the Dubbs Process

Converting Fuel Oil into Gas Oil and then cracking, isn't cracking Fuel Oil—it is cracking Gas Oil

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Problems Met in Refinery Construction

Foundations, Walls, Furnaces, Stills, Smokestacks, Condenser Coils and Boxes and Other Features Discussed by Expert.

By R. L. Walde
Superintendent Lorraine Refining Co., Bristow, Okla.

ECONOMY AND SAFETY IN BUILDING PLANT

In the accompanying article, Mr. Walde discusses several construction problems usually encountered in the building of a refinery of the "skimming" type. He presents the facts in a clear, concise and intelligible manner.

Mr. Walde knows whereof he speaks. For several years he has been connected with refinery construction and operation in the Mid-Continent Field. He has been superintendent of four plants and had complete charge of the construction of one. This article is of great value to all refiners who contemplate the building of new plants or the enlargement of old.

This story on the construction of a refinery will be followed by another article by Mr. Walde on the efficient operation of a refinery.

General observation bears ou the fact that a great deal of refinery construction is done in a haphazard and unscientific manner, especially in comparatively small plants where there is no graduate engineer in charge. In most cases plans and specifications are made on the basis of the designer's previous experience. For example, a man has built a plant with certain sized stills. He used certain thickness of walls, certain sized condenser coils and a certain number of square feet of condensing surface. He then has at hand the building of another plant with different sized stills. He reasons in this manner: The walls of the previous setting were so thick, the coils were of such a size and the condensing surface was of so many square feet. The still about to be set is twice the capacity, so it will take twice the thickness of wall and twice the condenser capacity. As a matter of fact, from a technical standpoint, as well as a practical one, his values will in all probability be wrong. In this way, much efficiency is lost and much unnecessary money is expended.

It is, therefore, the purpose of this article to bring out a few features which we shall call "semi-technical" that may be of value to those interested in general refinery construction. We shall not attempt at this time to go into refinery operations but confine ourselves primarily to construction.

Foundations

Practically all foundations, whether it be for stills, boilers, condensers or refinery, buildings are made of concrete. It is needless to say that the concrete used should be of the best consistency, and that the size of foundations should be of proper dimensions. Since the cement used is the most expensive part of the concrete, it is most essential that it be used in proper quantities. If too little is used, needless money is expended, in addition to poor construction. The same is true with respect to the size of foundations.

The proper mixture of crushed rock, sand and cement is obtained when the cement completely fills the voids of the sand and the combined sand and cement fills the voids of the crushed rock. A simple method of ascertaining the voids is to take a given volume of each of the sand and crushed rock to be used, add enough water to fill this volume, then pour out the water into a container. The volume of the water compared to the volume of the sand or crushed rock will give the desired ratios. It is self evident that the proportions will differ with the materials used, and by this simple method the proper proportions can be obtained. With reference to the size of foundations, it is essential to know the actual weight to be supported. The compressive strength of the foundation must be sufficient to support the weight. To allow for a reasonable factor of safety is sufficient.

Walls

The size and strength of walls for stills, boilers and buildings should be calculated in like manner, whether they be made of concrete, brick or metal. It is obvious to note that a 1,000-bbl. still will take a stronger wall than a 500-bbl. still. However, it is a problem of calculation to build a wall that is strong enough without going to excess.

One of the common faults in walls that undergo heating is the cracking of such walls. Small air spaces should be constructed both longitudinally and transversely throughout the walls to allow for expansion and construction. In this way a great deal of the injurious cracking of walls can be eliminated.

Furnaces

Furnaces are lined with fire brick, suitable to withstand high temperatures. These brick are laid together with either fire clay or high temperature cement. The high temperature cement has to a great extent taken the place of fire clay in recent years, especially where extremely high temperatures are required. This cement is applied between the brick in the form of a paste and a thin layer is spread over the face of the brick. After the furnace has been fired, this cement unites the brick into a solid wall, and forms a glazed surface over the brick, thereby protecting the brick from disintegrating under the extreme heat. This is higher in price than the fire clay but increases the life of the furnace.

The fire brick lining is insulated from the main part of the wall by either an air space or some insulating material. This space varies from two to eight inches in width. There are various materials on the market for filling this space, some in the form of powder and others in the form of blocks. Such material should be a poor conductor of heat, should expand little, if any, upon heating and should not lose its heat resisting power under continuous heating. Some materials have been classed as having a high degree of heat resisting power but will break down after several months of use.

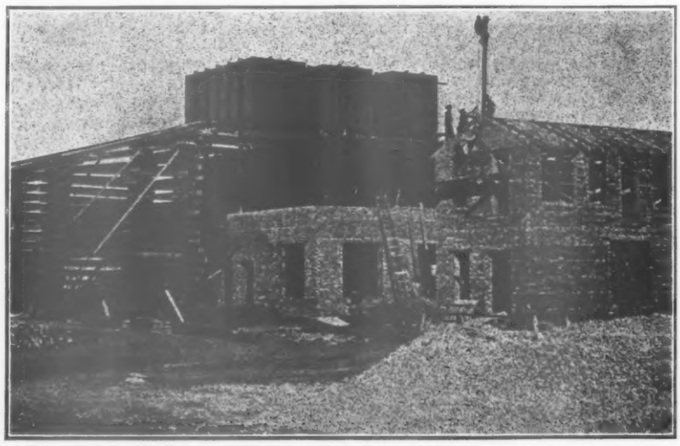
Several companies build patented furnaces which regulate the draft and mix the air with the fuel in a more efficient manner. In most cases, an air duct is constructed running from the fire end of the furnace, one-fourth to one-third the length of the furnace, either on the bottom or side and returning to relase the draft next to the burner. In this way, the cold air taken in as draft is heated before being mixed with the fuel, thereby increasing the fuel efficiency.

Stills

There are various opinions among refinery men as to the size of the most efficient stills. That must be left to the designer's own ideas. Stills should be set high enough from the ground to give suitably large combustion chambers. In recent years, it has been considered more efficient to increase this height. Scientific experiments have proved this.

In the construction of a still it is best to keep riveted seams away from the most intense heat. Consequently, the fire sheet or bottom longitudinal sheet in many stills is made of one piece of steel. If necessary to have a transverse seam, it should be as far as possible from the fire end, in other words, as long a sheet as possible on the fire end and the shorter sheet towards the rear. This fire sheet should be as wide as possible in order that the longitudinal seams shall be as far as possible from the bottom of the still where the most intense heat is. This lower sheet should be from ⅛ inch to ⅜ inch thicker than the rest of the still. Thicker rivets are also used on the seams of this sheet, all of which serve to withstand the more intense heat.

In computing the proper size of stack, it will be necessary to ascertain the amount of flue gas to be handled. The purpose of the stack is to carry off all the flue gas without taking off the fuel gases before they are burned, and at the same time, drawing in air to be mixed with the fuel. Too large a stack will take off some of the gases before combustion has taken place, while too small a stack will allow the combusted gas or the flue gas to linger in the furnace and thereby hinder efficient combustion. Stacks should be built amply large and dampers inserted in the ducts leading from the furnace to the stack, so that the draft can be controlled to insure most efficient combustion. Stacks are ordinarily built of concrete, brick or steel. Small ones are usually made of steel and the larger ones of brick or reinforced concrete. Reinforced concrete is probably more economical in the construction of large stacks or chimneys. Brick chimneys must be made with much thicker walls than concrete to withstand the weight and wind stress. In either event, the lower part of the stack is lined with fire brick to protect the walls from hot flue gases. It is generally recommended that this lining be used up until the temperature falls below 750 degrees F., after which suitable cement motar may be safely used.



Under Condenser Boxes

Condenser Coils and Boxes

There are two leading factors to be considered in obtaining the proper size of condenser coils and boxes. The volume of vapor to be taken off from a given still will determine the size and number of coils and the amount of water necessary to condense this vapor and cool the liquid will determine the size of the box. The volume of vapor is ascertained by the running capacity of the still. A given still efficiently vaporizes a certain number of barrels per hour. This will produce a certain volume of gas at the vaporizing temperature. The capacity of the condenser coils must be sufficient to carry off this vapor without creating any appreciable pressure in the still. (Except in the case of pressure stills where this pressure must be taken into consideration.)

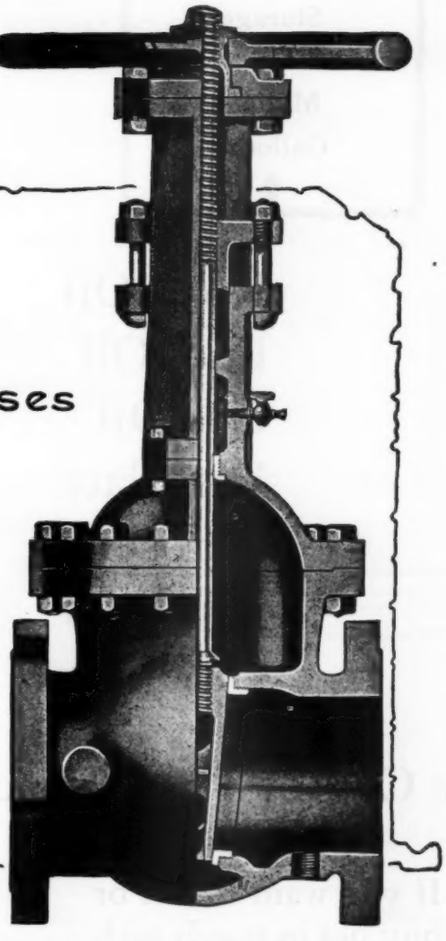
In determining the heat to be taken off by the water in the box, two calculations are necessary, namely the heat of vaporization or the number of units of heat given off in condensing a unit of liquid at the constant condensing temperature, and the amount of heat given out in cooling the liquid from the condensing temperature to the desired temperature where the liquid leaves the condenser. This desired temperature depends on the oil. In the case of high gravity gasoline, this temperature should be low to eliminate vapor losses in the tanks, while in the case of lower gravity products, this temperature may be higher.

Let us remark here that the correct calculation of heat transferred from vapor to water is a highly technical one, in as much as the vaporizing and condensing temperatures vary with the gravities of the liquids and consequently only general averages of condensing temperatures based upon average gravities can be practically used.

Condenser coils are made of wrought iron pipe, cast iron pipe or patented coils made on the principal of steam radiators. The special patented coils give a larger cooling area as compared to pipe and the materials used withstand the corrosion of the impurities in the vapor to a greater degree. This corrosion is

(Continued on Page 88)

CHAPMAN



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University of Texas Oil Leases Bought By Benedum-Trees

EL PASO, Tex., Oct. 20.—Announcement is made by Frank T. Pickrell of El Paso, that the Texon Oil & Land Co., of which he is vice president and general manager, has sold oil leases on 10,200 acres of University of Texas land in Reagan County, southeast of El Paso, to the Benedum-Trees interests. The consideration is said to be more than a million dollars. Included in the transaction is the Santa Rita well, which was brought in last May with an estimated production of between 100 and 200 bbls. a day, and two wells now drilling.

Mr. Pickrell said a syndicate to be known as the Big Lake Oil Co. is to be formed, whereby the Benedum-Trees interests will retain 75 per cent of the stock and the Texon Co. holding 25 per cent. Haymon Krupp of El Paso, president of the Texon Co., is now in the East in connection with the deal.

"According to our agreement," Mr. Pickrell said, "the Benedum-Trees interest will drill four more wells on university land; also pay to the Texon Co. a certain amount for the Santa Rita well and the two drillings now in progress. The State College of Texas is to receive one-eighth royalty from all oil produced in wells drilled on that land."

The Texon Co., it is reported, will retain 50,000 acres of leases in the field, east of Fort Stockton.

An active campaign of oil exploration is in progress in the Fort Stockton Field, also in Presidio and Brewster Counties, between Alpine and the Rio Grande, and in the valley of the Concho River above Ojinaga in eastern Chihuahua.

WYOMING-MONTANA

(Continued from Page 50)

the Musselshell Valley Oil Co.'s well on Section 8-15-28 and will clean out and put it to pumping.

Pipe Line Runs

Pipe line runs from the Wyoming Field gained on the previous week's report as the pipe lines are gradually working back to normal capacity. All the fields are reporting that producing conditions are getting better right along and that the normal capacity will be reached shortly.

Salt Creek	125,000
Teapot	4,650
Big Muddy	4,225
Lance Creek	460
Pilot Butte	80
Lander	340
Lost Soldier	5,100
Rock River	3,750
Grass Creek	4,675
Hamilton Dome	505
Elk Basin	1,850
Notches Dome	250
Greybull	155
Osage	740
Ferris	85
Poison Spider	1,035
Cat Creek	5,210
Sunburst	500
Miscellaneous	675
Total	159,285

GULF INDEPENDENTS BIG FACTOR IN EAST

(Continued from Page 78)

operating in the Mid-Continent and western Pennsylvania fields are the ones to suffer, and while the public will benefit temporarily by lower gasoline prices, there is a question how long these benefits will last if crude oil production should take a sudden drop.

Some independent oil operators of the lesser variety, forced out of the Middle West largely through the drastic price cutting, have turned to the Atlantic Coast, where they have been willing to sell at a loss, if only they could sell. These operators, classed as gasoline "bootleggers" by the larger concerns, have been rapidly squeezed here, and the last cut of 2 to 3 cents, is expected to finish the job, according to the statements of some of them.

There is still a "hard winter" to go through. Indications are that by next spring, when there possibly may be a big change in the production situation, many of the little fellows will be out of the picture all together. If so, the chief competition may be between Colonel Stewart, Gulf and Sinclair, and the Atlantic Coast Standards.

WILDCAT DEVELOPMENT CARRIED ON IN TEXAS

(Continued from Page 42)

Rusk	2		1
Titus	1		
Van Zandt	3		0
Williamson	4		0
Wood	3		0
23	74		11

North Central Texas

Brown	4		1
Baylor	1		0
Clay	10		0
Carson	5		1
Donnelly	1		0
Gray	3		0
Hutchinson	4		1
Hemphill	1		0
Jack	2		0
Montague	8		0
Mitchell	4		1
Potter	2		0
Surry	2		0
Throckmorton	1		0
Palo Pinto	13		1
Wheeler	4		0
Shackelford	3		1
17	66		11

Recapitulation

Dist.	No. of Counties	Drlg. and S. D.	Rigs	Total
Southwest and West	43	152	29	181
North-Central	17	66	11	77
East Central	23	74	13	87
	83	292	52	344

Add to these the wells drilling in proven fields and pools at the close of September, gives a total of 726 tests under way in the State and 206 rigs in or derricks up. The Powell Field alone shows 165 wells drilling and 41 rigs up. The Archer County districts are the most active in the North-Central division with 49 wells drilling and 11 rigs up. In the new Luling Field in Caldwell County 15 wells are drilling and 5 rigs up.

A summary of operations in Texas gives the following results by divisions; including work in the proven fields and wildcats:

Division—	Drlg.	Rigs	Total
Gulf Coast and Southwest	253	101	354
North-Central	218	81	299
East-Central	255	84	339
	726	266	992

OIL QUESTIONNAIRE TO KANSAS REFINERS

TOPEKA, Kans., Oct. 23.—Some idea of the possibilities of Governmental control were given Kansas refiners during the past week when Attorney General Charles B. Griffith mailed a long list of questions to the oil refining companies of the State.

He made a demand that the refiners list every transaction, large and small, into which they have entered from the time they were organized to the present hour, with details of every purchase, every sale of all kinds of products and every disbursement of any kind whatsoever.

The questionnaire is a part of the private investigation of Attorney General Griffith, who is trying to probe the inner workings of the oil industry. Refiners who have received the questionnaire declare the demand for listing all transactions is fatuous, that it is impossible of answering, that it would entail a corps of dozens of high-priced accountants many weeks to ascertain, and that it would be impossible to make a complete listing of all transactions.

NAMES REPRESENTATIVE

JACKSON, Mich., Oct. 23.—The American Oil Co. of this city has announced that A. J. Stevens, formerly of the Stevens Oil & Grease Co., has been secured as its special representative. He will attend to sales development work.

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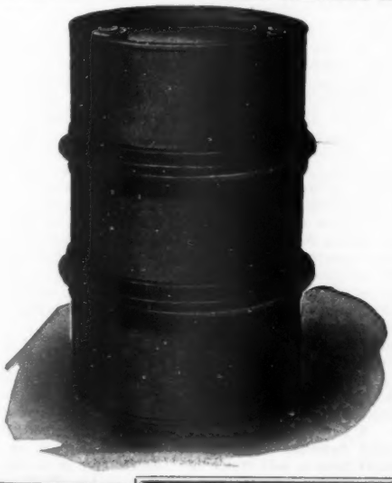

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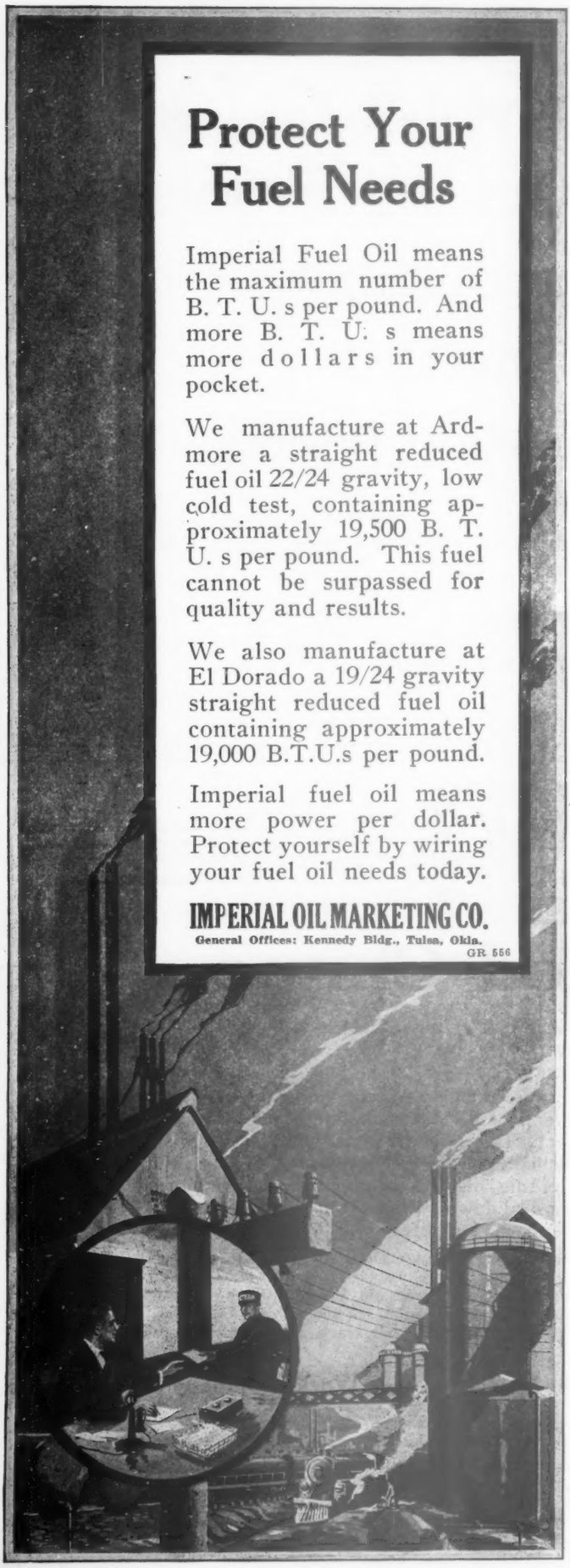
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PROBLEMS MET IN REFINERY CONSTRUCTION

(Continued from Page 84)

very marked in the case of wrought iron pipe, however, less so in the case of cast iron pipe.

Heat Exchangers

The purpose of a heat exchanger or interchanger as it sometimes is called, is to transfer heat that has served its purpose to a place where it is needed. Ordinarily, such a device is used to transfer the heat that is left in the oil, after distillation is completed, to the cold crude oil going to the stills. Ofttimes, the heat from exhaust steam is transferred to the cold oil in like manner. However, a great share of the exhaust steam is generally used to preheat the feed water for the boiler.

In constructing an exchanger, pipe coils are placed on the inside of a shell similar to a boiler shell or small still. When possible both ends, or at least one end, of this shell is made with a plate bolted on to a flanged head, so that the coils can be made up on the outside and slid into place and consequently removed at any time in the event of necessary repairs.

The hot oil (fuel oil) coming from the still after all products have been distilled off goes through the coil. The cold crude oil going to another still goes through the shell and consequently envelops the outside of the coil. In this way, the heat is transferred through the coil to the cold oil. It should be arranged so that the flow is counter-current, in other words, the fuel oil should leave the exchanger near the place where the cold crude enters and the heated crude should leave it near the place where the hot oil enters. This insures greater efficiency. In this way a threefold advantage is obtained. The crude oil is heated, which means economy of fuel, the hot oil is cooled, so that it can be pumped into open tanks without flashing and if there is any moisture in the crude oil, it will settle out and can be drawn off at the bottom of the exchanger. The coils are generally made of wrought iron pipe and return bends. However, a more elaborate arrangement is to weld the pipes together and make a spiral coil like the coil of a hot water heater. This does away with any fittings and eliminates the forming of coke and sediment in the bends.

There are some patented exchangers on the market that have a coil inside of another coil which insures a better counter-current flow and consequently gives a more efficient exchange of heat.

Ordinary stationary steam boilers are used to furnish steam for pumps, steam inside of stills to aid distillation and any other place where steam power is best adapted.

The exhaust steam from pumps and engines can be used to preheat the water in a manner similar to that mentioned under heat exchangers, only it is best to use the exhaust steam in the shell and the feed water in the coil. In this way the capacity of the boilers is increased and the fuel bill is decreased.

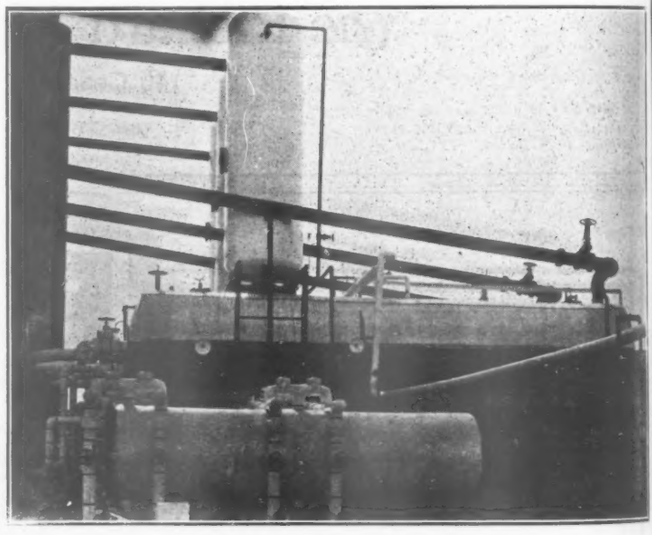
Steam coming direct from the ordinary boiler is known as saturated steam, the lowest temperature at which the water vaporizes under the given boiler pressure. Since the energy of the steam depends upon the heat, it is advantageous to heat the steam; in other words, superheat it. For example, the temperature of saturated steam at 100 pounds pressure is 338 degrees F. This can easily be heated to 1,000 degrees F. Consequently, the same volume of steam will do three times as much work. In addition, superheated steam can be carried in pipes much greater distances without condensation. However, it must be remembered that stronger lines and fittings should be used for superheated steam. In general, this superheating is done by running the steam through coils in the fire box or, preferably, in the rear of the boiler away from the direct effect of the flame. Many firms now make boilers that are equipped with superheated coils.

Pumps

Steam pumps in general use around a refinery are designated by sizes comprising three numbers. For example, a 10x12x14 pump means that the diameter of steam end is 10 inches, the diameter of fluid end is 12 inches and it has a 14 inch stroke. In selecting a proper pump, these following factors should be taken into account: The steam pressure, the capacity desired and the pressure of the liquid necessary to maintain that capacity. For example, if a large capacity is desired and only a small pressure will be necessary to produce that capacity, the diameter of steam end and fluid end may be of nearly the same dimensions. However, if the line to be pumped through is long and small, the steam end must be proportionately larger than the fluid end.

The capacity of a pump can be figured by multiplying the number of strokes per minute by the volume of the fluid end. The pressure that a pump will exert on the fluid end is proportional to the pressure on the steam end in the same ratio that the square of the diameter of the steam end is to the square of the diameter of the fluid end, allowing for friction. For example, a 12x4x12 pump with 100 pounds steam pressure will put up 900 pounds pressure on the fluid end, less friction.

In laying out lines for a refinery the



Under Heat Insulation

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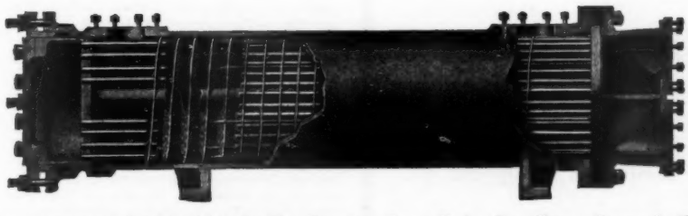

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capacity of a line in addition to the total friction on the full length of the line should be based upon the desired capacity, always allowing for a factor of safety.

Heat Insulation

Open steam for hot oil lines and unprotected hot surfaces radiate heat in large quantities and consequently increase the fuel consumption. It is therefore important that these surfaces be covered with some insulating material. Sponge felt, magnesium compounds and asbestos are most commonly used for this purpose. Sponge felt and compressed magnesium compounds are manufactured in thick blocks. These blocks are applied next to the metal surfaces. This is covered with a magnesium or asbestos paste. Otuside surfaces are then weather-proofed with an asphalt or asbestos fiber paint. In some cases roofing material or corrugated asbestos sheets are used to protect the insulation from the the weather. Inside insulated surfaces are generally covered with canvas. This increases the heat efficiency and cuts down the fuel bill to a marked degree.

Conclusion

It will be noted that the data herein contained apply principally to the ordinary skimming plant. Lubricating plants and cracking plants present additional problems. Space has not permitted to include definite values or formulae. These can be obtained from engineering books or construction companies.

In making calculations, as suggested in various parts of this article, it must always be remembered that all contingent factors must be taken into consideration and that the ever present factor of safety must always be allowed for. It is better to be safe than sorry. To go in excess beyond this is a waste of time and money.

Under Heat Exchanger

ATTORNEYS GENERAL NAME COMMITTEE

(Continued from Page 82)

wagon price, allowing a margin for the freight and cost of distribution and their profit. A large part of the gasoline sold by the independents is bought at the market price. The independents, however, are restrained from making their own prices by fear of retaliation by the Standard and by a policy on the part of the Standard of meeting their price made in any territory. The independent dealer therefore has nothing to gain by reducing his price except a loss of a part of his margin because the Standard immediately meets the reduction in price. The net result is that the prices are uniform, based on the Standard tank wagon price.

"The testimony of the independents and Standard Oil officials alike was that a fair margin between the refinery delivery price and the tank wagon price would be 3½ to 4 or 4½ cents per gallon. An analysis of the prices obtained in Wisconsin shows that during this year, prior to the price cut, the margin between the delivery refinery prices, and the tank wagon price in Wisconsin ranged from somewhat over 4 cents per gallon to nearly 10 cents per gallon and was nearer the higher figure a very large part of the time. At the time of the price cut of 6.6 cents per gallon of gasoline on August 14, 1923, the margin was nearly 10 cents per gallon. Since the price cut the margin has ranged between 4 and 6 cents per gallon. The Standard Oil Co. of Indiana, in making a charge at Whiting to its Wisconsin marketing department for purpose of accounting, has during this year allowed the Wisconsin Marketing Department a margin of 4.8 cents per gallon.

Crude and Gasoline

"The Standard Oil Co. of Indiana owns the Midwest Refining Co., operating in the Wyoming Field, and a half interest in the Sinclair Crude oil Producing Co., operating in the Mid-Continent Field. Each company controls half of the directors. Under arrangements made by the latter company the Standard Oil Co. of Indiana has a direct interest in maintaining an excessive price for crude oil and the chairman of the board of directors of the Standard Oil stated that the production of crude oil had for years been restricted in the Wyoming territory and that such restriction was now in effect in the Mid-Continent territory through the limitation of purchases by the Sinclair and the Prairie Oil companies and other purchasing companies. The resultant higher prices of crude directly increased the prices of gasoline to the consumer. At that the margins and the profits have in the past been very excessive. Gasoline is now being sold at a margin in excess of that necessary.

"Another feature that developed in the hearings is the fact that under agreements licensing the use of the Burton cracking process for increasing the yield of gasoline from crude oil the Standard Oil Co. of Indiana has obtained agreements from other companies in the Standard Oil group not to market gasoline obtained by this process in the Standard Oil of Indiana territory. As gasoline is ordinarily mingled before being sold, this results in effectively excluding every company in the Standard Oil group from doing any business in the Standard Oil of Indiana territory.

"It has also been made clear that the various companies in the Standard Oil group operate under a plan of not selling gasoline and kerosene in the territory occupied by another company of that group. The exceptions to this are so rare as to make the rule even more apparent.

"The hearings in Wisconsin have not been completed and Wisconsin is very desirous of cooperating with other States for the purpose of bringing out all the facts and taking such course as shall best protect the interests of the public."

LIGHT OILS IN DEMAND FOR HOME USE

Increased Number of Oil Burning Heaters in Chicago Territory Resulting in Better Sales of Fuel Oil. Gasoline Competition Now Is for Future Contracts With Wide Margins Offered. Kerosene Firm

By John B. Waldo

CHICAGO, Oct. 22.—The market is not dead by any means, but it does seem kind of drowsy just now. For one thing, we have been having bad weather, not so cold, but very wet. The rains have been quite general and have slowed up the gasoline demand to some extent. The larger organizations are busy figuring on big things to come and there are statements that some big deals are being put through, but right now the activity is not so great.

Prices are generally unchanged, except the oils used for heating purposes and in these there is quite a difference with the heavy oils quiet and the light burning oils, the distillates, firm and hard to get. This is, of course, the result of the increased number of oil heaters that have been installed in the homes in this territory. Like in many other products, the individual consumption is not great but the bulk is large and will be larger. One of the leading Mid-Continent refiners is finding it impossible to resist the demand from his customers for straw distillate for heating. This particular refiner would prefer to use the product in his own refinery but the demand is there and to keep his customers in line he simply has to fill the orders and he may have to go into the market for his distillate to run his own stills.

With the heavy fuel oils the contrary is the case. The low price of last week is more commonly quoted and will be the usual price of this week unless something sets in to strengthen the market.

One refiner's representative, with a lot of fuel oil to dispose of, stated that he had lost a lot of business as the buyers, instead of contracting, were ordering in the open market. This condition is not due entirely to the price and in fact, in some cases, prices have nothing to do with the refusal of buyers to contract for their future requirements. There is a very evident desire on the part of the larger organizations in the manufacturing line to proceed with great caution. In one case the buyer stated that the price offered made no difference as he had instructions from the very top not to stock up and that the management would take the full responsibility of the result. At the very close of the week, the trouble with deliveries, due to some car shortage, made a little better price situation.

Gasoline Steady

The demand is strictly seasonable and good for the season, all things considered. The competition right now is for future contracts and the jobber that does not have a good contract for next year can only blame himself for they are being offered at very liberal terms, 5½ cents being not exceptionable. In connection with the matter of margins, the statement was made recently that whereas the old contracts used to run from 2½ to 3½ with 4 cents exceptional, at present jobbers are being offered margins at 4 to 5½ cents. How they can do it, even admitting that present methods have decreased the cost of refining, is a question with the oil men.

Spot business is being done largely on a basis of 6½ to 6¾ cents for the New Navy grade. The large refiners, as a rule, are holding for 7 cents. Few such are offering less than 6¾ cents, but in some parts of the territory the price is being made of 6½ cents, and while the makers of the price are asking the jobbers to keep this price confidential and can be only guessed at, the fact that this offer is most freely made in Michigan sort of gives the location of the makers of the offer away. Some refiners who were firm at 7 cents a week ago have found that they were getting towards the end of their booked business and have authorized a price of 6¾ cents. Heavy spot business is not expected right now as the season is about over and the road conditions are bad. We have yet to have our Indian Summer and this should give the demand a spurt before it settles down to the winter runs. There is one thing that the trade does seem to feel and that is that prices are well towards the bottom and that so far as refinery prices are concerned they need not look for lower quotations.

Kerosene and Distillates Strong

The demand for kerosene has increased and the market is firm. Higher refinery prices seem unlikely with present tank wagon markets as the present costs of the commodity laid down at the jobbers' sidings is high enough to make the profit on handling kerosene small. The jobber cannot affort to pay higher prices and the result is that the two usual gravities are selling in most cases on the same price level. This may be due in part to the shipping delays which make it necessary in some cases to take what they can get rather than what they want. It is believed that the stocks of kerosene have been reduced considerably by the recent demand and that supplies in refiners' tanks are not large.

The demand for distillates for burning is very good and some buyers report that the oils are hard to get. Prices to the consumer for light distillate are 8 cents per gallon, delivered in 200-gallon lots, and there is some talk that the largest distributor has been considering a reduction, but this seems unlikely at present, at least. The same grade sold last season at 9½ cents. So far, the burners using a distillate are much more numerous than those that use a fuel oil and the quantity used by the average household is not so large as to make the saving in price of the fuel a matter of moment when the certainty of easy operation continuously is considered.

The demand for gas oil is a little better but nothing to brag about. There is some decrease in the offerings. This may be temporary, due to car troubles and bad weather, but it has encouraged some of the marketers to believe that better times are coming in the market for this product. There is no great supply available and any increase in the demand would be felt quickly in the market in the shape of somewhat higher prices.

Lubricating Oils

Refinery representatives and marketers state that the demand continues good along the same lines as have been followed practically during the entire season. Some report that the call from the jobbers is slowing up a little and others say that they are doing as much business as ever. Most of the refiners claim that on the grades most in demand they are still behind with orders from 10 to 20 days. Export inquiry is considerable and American mineral lubricants seem to have established themselves firmly with the foreign users, both in Continental Europe and South America. Wherever there is a quantity of lubricating oils required, American oils and greases will be found. One of our large mail order houses which specializes on lubricants has a very large business in South Africa. Several concerns made a start towards a mail order business in lubricating oils but recently the improved methods employed by the refiners to reach the consumer with the facts regarding

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their oils and greases has restored this trade in a great measure at least to the local jobber and the local storekeeper.

Tank Wagon Prices

The stuation is getting worse to the extent that cuts from the regular tank wagon prices have been made in more points and at several there have been second cuts. The situation at Detroit is a sample of what happens. The market was badly demoralized by cheap prices when the White Star Refining Co., a large distributor, announced a reduction of 2 cents a gallon on gasoline. This reduction was followed by the Standard Oil Co., and the Sinclair Refining Co. Two small jobbers then made further reductions and last week they were notified by the White Star Co., that unless they restored the market, a second decline of 2 cents would follow. The White Star announced this reduction on the morning of October 19, and was followed by the Standard Oil Co. at noon the same day, with others lining up in the afternoon. This puts the tank wagon price for gasoline at 10.8 cents for Detroit. The reduction at Beloit was made on a cut made by a garage owner with two small outside stations. It is reported that this cut cost one of the large oil concerns $50,000.

The only thing that seems possible to stop this price cutting by irresponsible small distributors, seems to be a more strict enforcement of rules regarding credits. They should be watched by the credit departments for their prices entail actual losses, as the oil refiners and marketers know, although the offender may believe that he can sell below his actual costs and still make money. The price cutter is never a safe risk and is not building up any future business. It is different with a dealer with a mixed stock who can make an outrageous slash in the prices of say sugar if he gets with it an order for the more expensive or profitable lines. This is an old dodge and seems to work, but when the oil jobber has sold the motorist gasoline he is practically through and has all the business than can be hoped from the average driver of an automobile.

There has been considerable talk and some statements published regarding a probable decline in the tank wagon market for gasoline. The writer does not believe that there is any real foundation for this report—it has become more than a mere rumor—as the statement of the larger organizations is sincere that the present tank wagon prices represent a loss over the cost of producing, refining and distributing. Cheaper crude might be the basis for a further decline, that is, a substantial reduction, but this is not considered right now so far as this market knows. It would seem that some of these little annoyances would eliminate themselves and it is to the interest of the refiner and marketer to stand back of the reliable organizations that do not cause widespread losses to the industry and its substantial members by such tactics. One concern that is a chief, if not the principal competitor of the Standard Oil Co., at 70 odd points, states that it has not had reduction at any of these points, not because there are no other concerns there, but because apparently the distributors know the business and realize how difficult it is to get a price up when it has once been declined without real reason.

REORGANIZE REFINERY CO.

CHICAGO, Oct. 23.—The Lakeside Refining Co., operating a refinery at Augusta, Kans., has been reorganized and the name has been changed to the Grant Oil Co., which formerly handled the pipe line work for the refining company. The officers are the same.

INCREASES CAPITAL

CHICAGO, Oct. 23.—The Horton Oil Co., distributing subsidiary of the Johnson Oil & Refining Co., has announced an increase in its capital stock from $50,000 to $100,000.

Settlement of Suits On Patent Rights of Cracking Processes

Recent settlement of various suits over patent rights has simplified the situation regarding several cracking processes. The Standard Oil Co. of New Jersey and the Gasoline Products Co. have settled the differences between them in their recent legal controversy out of which arose the suit of the Standard Oil Co. of New Jersey vs. the Pure Oil Co., one of the licensees of the Gasoline Products Co. under its "Cross Process" cracking patents.

Settlement of the suit of Rogers vs. Adams and The Texas Co., in which the Standard Oil Co. of New Jersey was contesting the title of The Texas Co. to the Adams patents for cracking heavy oil to produce gasoline, has done away with further litigation between those companies along that line.

The Standard Oil Co. of Indiana, owner of the Burton cracking patents, joined in certain phases of the litigation, settlement of which is expected to avoid further litigation between the four parties. All four litigants will continue to grant licenses for their respective cracking processes as heretofore.

Company's Statement

The Gasoline Products Co. makes the following announcement: "By virtue of agreements recently entered into, the Gasoline Products Co., in licensing its cracking process under the Cross patents, is now prepared to additionally secure its licensees by granting them the protection in the operation of the Cross process of all patents relating to cracking under pressure and refining cracked products, now owned or acquired prior to January 1, 1937, by the Standard Oil Co. of New Jersey and the Standard Development Co. All patent litigation between the Gasoline Products Co., or its licensees and the companies mentioned has been settled. Similar protection under the patent rights of The Texas Co. and the Standard Oil Co. of Indiana has heretofore been accorded licensees of the Cross process."

To Protect Licensees

The situation regarding cracking patents prior to the settlements had been involved to a considerable extent with numerous suits. The Gasoline Products Co. decided to afford the best possible protection to licensees by agreement with the larger interests in the cracking field, regarding definition of the respective processes, including the right to license the operation of the Cross process specifically under their patents, thereby avoiding all danger of litigation, which would lead to much annoyance to the licensee.

The Gasoline Products Co. emphasizes the fact, however, that the Cross process can be operated only under license from the Gasoline Products Co., and that the terms of such license are the same to all. The company has always guaranteed its licensees against suits for infringement in the operation of the Cross process, and says its agreement with the larger interests of the refining industry offers practical proof of the soundness of its position and the Cross patents, and at the same time definitely assures freedom from litigation.

COMPLETING REFINERY

The Imperial Oil Co., Ltd., Canadian subsidiary of the Standard Oil Co. of New Jersey, expects to complete its $2,500,000 refinery at Calgary early in November and will draw on the Montana and Wyoming oil fields for its supply of crude. Storage at the refinery already contains about 50,000 bbls. of Kevin-Sunburst crude, and preparations are being made for the storage of a much larger supply as soon as the plant is in operation.

NORTH CENTRAL TEXAS

(Continued from Page 40)

tools at 2,950 feet; Underwood Drilling Co.'s No. 1 Wilmot, rigging up machine on top of an oil sand at 1,580 feet; Verschoyle and others' No. 1 Wilson, shut down, sand at 1,400 feet, showing some oil, looks like it might make a commercial well; Whitehead and others' No. 1 Kunkel, drilling at 1,745 feet.

Young County

Completions: Carter and others' No. 1 Saunders, dry at 4,100 feet; same company's No. 1 Rubinkoenig, dry at 4,000 feet; Dorohue and others 'No. 1 Logan, dry at 1,300 feet; Kouri and others' No. 1 Sedden, dry at 2,440 feet; Owens and others' No. 1 McBrayer, dry at 2,208 feet; Stovall and others' No. 1 Stovall, 15 bbls. at 2,140 feet.

Drilling: Associated Oil Syndicate is a rig building; Calmo Oil Co.'s No. 3 Moren, drilling at 355 feet; Creighton and others' No. 1 Vernon, running 6⅝-inch casing at 1,086 feet; Gulf Production Co.'s No. 2 Hockaday, rigging up a rotary machine to drill deeper at 3,305 feet; McGuire and others' No. 1 Carter, fishing at 1,725 feet; Mid-Kansas Oil & Gas Co.'s No. 1 Gibson, topped lime at 3,750 feet, sidereaming with 1,000 feet of oil in the hole; No. 1 Moren, fishing at 1,165 feet; Dudley Miller and others' No. 2 Hughes, drilling in blue shale at 1,830 feet; Mutual Oil Co.'s No. 2 Glidwell, show of gas and oil and drilling at 1,961 feet; Nash and others' No. 1-B Williams, drilling rock at 1,565 feet; Seaboard Oil & Gas Co.'s No. 4-A Hughes, drilling at 905 feet; Shamrock Oil Co.'s No. 3 Bower, building a rig. Smith and others' No. 1 Benson, underreaming 8¼-inch casing at 780 feet; Snowden & McSweeney's No. 1 Carter, drilling at 1,870 feet; Texas Eureka Syndicate's No. 1 Harrell, cleaning out after shot at 4,080 feet; Weekly and others' No. 3 McLaren, spudding. Whitehall and others' No. 1 Johnson, shut down for casing at 4,229 feet.

Stephens County

Completions—Corbett and others' No. 1 Williams, 100 bbls. at 2,000 feet; Landreth Oil Co.'s No. 1 Moore, 150 bbls. at 3,580 feet.

Drilling—Critten and others' No. 1 Cobb, drilling at 2,130 feet; Humble Oil & Refining Co.'s No. 2 Caton, pulling casing to abandon at 3,329 feet; Mid-Kansas Oil & Gas Co.'s No. 2 Cauger, sidereaming 8-inch casing at 2,475 feet; Texas Co.'s No. 19 Black Bros., shot with 100 quarts, no response at 3,320 feet; Texas & Pacific Coal & Oil Co.'s No. 1 Rogers, fishing for 5-inch casing at 4,057 feet; Curry Pool Oil Co.'s No. 1 Jones, drilling at 2,790 feet; Humble Oil & Refining Co.'s No. 1 Wild, running 8-inch casing at 2,490 feet; Magnolia Petroleum Co.'s No. 2 George, drilling in shale at 2,606 feet; No. 12 Rush, drilling at 860 feet; No. 4 Walker, at 805 feet; M. & M. Oil Co.'s No. 1 Boyett, fishing for a bit at 1,530 feet; Republic Producing Co.'s No. 3 Jones, fishing for tools at 3,870 feet; Royal Palm Oil Co.'s No. 1 Newham, running 5-inch casing at 3,260 feet; Scott and Bateman's No. 1 Davis, drilling with a hole full of water at 1,605 feet.

Eastland County

Completions—Brothers Oil Co.'s No. 2 Rogers, 60 bbls. at 2,850 feet; Lone Star Gas Co.'s No. 1 McMillan, 10 bbls. at 3,170 feet; Mid-Kansas Oil & Gas Co.'s No. 5 Harrell, 2,000,000 feet of gas at 3,545 feet; Mook Texas Oil Co.'s No. 2 Harrell, dry at 3,620 feet.

Drilling—Ablon and others' No. 1 Collins, drilling in lime and shale at 2,905 feet; Beckett and others' No. 1-B Allen, drilling at 1,235 feet; Clayton and Turner's No. 1 Steel, at 955 feet; Donnelly Bros. Drilling Co.'s No. 1 Allen, drilling at 3,375 feet; Eby and others' No. 1 Miller, spudding. Gholsen and others' No. 2 Shugart, drilling at 200 feet; No. 1 Wood, shut down but will start drilling in the near future at 3,580 feet; Harrell and others' No. 1 Mahan, spudding; Knox and others' No. 1 Edison, spudding; Kokomo Petroleum Co.'s No. 1 Harris, drilling at 1,555 feet; Post Duke Oil Co.'s No. 2 Abernathy, set 6⅝-inch casing and will start drilling at 2,992 feet; Andy Urbin's No. 1 Neville, drilling at 3,400 feet; Wolf and others' No. 1 Walker, drilling at 2,853 feet.

Wildcats

Palo Pinto County: Completions—Mutual Oil Co.'s No. 1 Robinson, 10 bbls. at 1,500 feet; Buckeye Pipe and Supply Co.'s No. 1 Morgan, dry at 4,035 feet; Moore and Sneibold's No. 1 Boles, 5,000,000 feet of gas at 3,245 feet.

Drilling—Pender Production Co.'s No. 1 Slemmons, running 5-inch casing at 3,535 feet; Graham and others' No. 1 Candill, drilling in shale at 2,345 feet; Thomas and others' No. 1 Thomas, drilling up a bailer at 3,340 feet; Upham and others' No. 3 Watson, set 6-inch casing and drilling without any showing at 3,405 feet; Thomas and others' No. 1 Thomas, drilling up a bailer at 3,340 feet; Bankhead and others' No. 1 Bankhead, drilling at 220 feet; Cunningham and others' No. 1 Poer, drilling in lime at 3,555 feet; Dalton Oil Co.'s No. 5 Dalton, will shoot a black lime formation at 3,750 feet; Scott and others' No. 1 River Bed, fishing for tools at 3,700 feet; Simms Oil Co.'s No. 1 Costello, drilling at 765 feet.

Comanche County: Completions—Lightfoot and others' No. 1 Perry, 10 bbls. at 875 feet.

Mitchell County: Drilling—Colo-Tex Petroleum Co.'s No. 2 Foster, drilling by a bit at 2,620 feet; Fensland Oil Co.'s No. 1 Badgett, drilling at 2,000 feet; Kelsey and others' No. 1 Badgett, swabbing 50 bbls., may shoot a sand formation at 3,100 feet; Sloan and others' No. 1 O'Neil, drilling at 2,890 feet; Morrison and others' No. 1 Morrison, waiting on casing at 3,905 feet.

Brown County: Completions—Slick and the Phillips Petroleum Co.'s No. 1 Harris, 200 bbls. at 2,960 feet.

Brown County: Drilling—Canyon Oil & Gas Co.'s No. 2 Elsberry, drilling in shale at 2,935 feet; Gillett and others' No. 2 Prather, cleaning out and drilling at 95 feet; Helms and others' No. 1 Smith, drilling at 1,225 feet; Pennant Oil & Gas Co.'s No. 1 Strickland, drilling at 2,446 feet.

Baylor County: Drilling—Waggoner and others' No. 1 Portwood, has an oil sand at 1,435 feet; and waiting on 6⅝-inch casing before drilling deeper.

Clay County: Completions—Clark and others' No. 1 Turner, dry at 3,705 feet; John O'Neil's No. 1 Kuykendall, dry at 2,020 feet.

Drilling—D'Yarmett and others' No. 1 Carpenter, coring at 1,700 feet; Gulf Producing Co.'s No. 1 Boddy, drilling at 2,005 feet; Knox and Finley Development Co.'s No. 1 Scott, showing for a producer, sand at 1,155 feet; Lone Star Gas Co.'s No. 7 Edrington, drilling at 2,085 feet; Nebraska Oil & Gas Co.'s No. 1 Myers, shut down fishing for tools at 3,282 feet; Nix Moore and others' No. 1 Hull, drilling at 1,200 feet.

Cook County: Drilling—Big Indian Oil Co.'s No. 1 Davis, set 6⅝-inch casing and drilling at 2,545 feet; Red River Drilling Co.'s No. 1 Jones, fishing job at 1,205 feet.

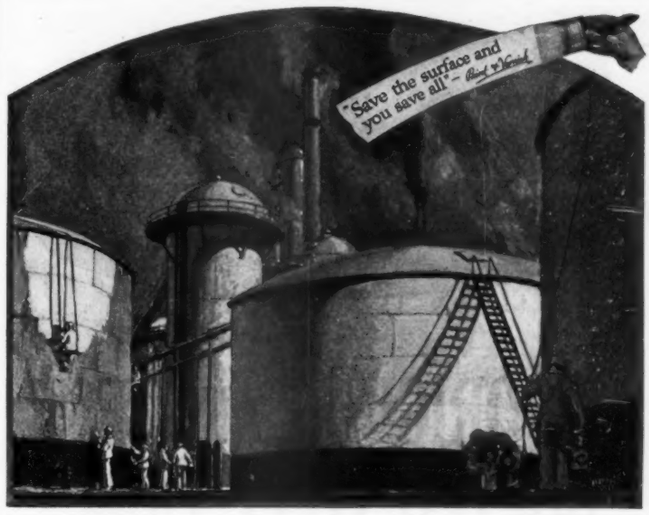
Jack County: Completions—Dunn and others' No. 1 Humphreys, dry at 3,535 feet.

Drilling—Duncan and others' No. 1 Woodward, underreaming at 700 feet.

Montague County: Completions—Humphreys Oil Co.'s No. 2 Maddox, dry at 1,022 feet.

Drilling—The Texas Co.'s No. 1-A Gist, drilling in hard lime at 685 feet; Amerada Oil Corp.'s No. 1-A Beasley, drilling in hard shale at 2,550 feet; Gulf Producing Co.'s No. 1-A Benton, drilling in brown shale at 1,615 feet; Mascho Oil Co.'s No 1 Howard, fishing for a joint of 8-inch casing casing at 1,580 feet; Texon Oil Co.'s No. 1-A Crenshaw, underreaming 8-inch casing at 1,600 feet.

Armstrong County: Drilling—Mag-



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nolia Petroleum Co.'s No. 1 J. A. Ranch, drilling at 1,110 feet.

Carson County: Drilling—Gulf Production Co.'s No. 3 Burnett, lubricating off gas at 3,035 feet; Hmphreys Oil Co.'s No. 1 Sandford, drilling by tools at 2,540 feet; The Texas Co.'s No. 2 Burnett, drilling and underreaming 4¾-inch casing at 3,060 feet; Tipton and others' No. 1 McConnell, drilling at 3,020 feet.

Gray County: Drilling—Holmes and others' No. 1 Morris, underreaming at 900 feet; The Texas Co.'s No. 1 Saunders, running 10-inch casing at 1,480 feet.

Hemphill County: Drilling—Piney Oil Co.'s No. 1 Hopkins, drilling in shale at 2,415 feet.

Hutchinson County: Drilling—Coline Oil Co.'s No. 1 Sandford, drilling at 3,195 feet; Humphreys Oil Co.'s No. 1 Johnson, rebuilding a derrick at 2,518 feet; Montgomery Oil Co.'s No. 1 Johnson underreaming at 820 feet; Producers and Refiners Co.'s No. 1 Bivens, drilling at 165 feet; Whittaker and others' No. 1 Johnson, a derrick.

Potter County: Drilling—Producers and Refiners Co.'s No. 1-A Bivens, drilling at 850 feet; No. 2-A Bivens, drilling at 610 feet; No. 2 Masterson, drilling without any showing at 2,550 feet.

Wheeler County: Drilling— Whittington and others' No. 1 Laycock, lubricating off gas at 2,100 feet.

PRODUCTION REPORT

Week Ending October 18, 1923

Burkburnett

American Refining Co.	300	
Barkley & Meadows	2,000	
Humble Oil & Ref. Co.	655	
Gulf Production Co.	1,775	
Magnolia Pet. Co.	3,670	
Middle States Oil Corp.	285	
McMahon Oil Co.	430	
Panhandle Ref. Co.	500	
Sinclair Oil & Gas Co.	95	
The Texas Co.	715	
Texhoma Oil & Ref. Co.	600	
Miscellaneous	13,225	
Total		24,250

Electra

Empire Gas & Fuel Co.	2,020	
Humble Oil & Ref. Co.	130	
Griswold Oil Co.	570	
Gulf Prod. Co.	1,015	
Magnolia Pet. Co.	5,035	
Middle States Oil Co.	220	
McMahon Oil Co.	220	
The Texas Co.	5,400	
Texhoma Oil & Refining Co.	2,605	
Miscellaneous	4,900	
Total		22,615

Iowa Park, Archer County and Petrolia

Iowa Park—		
American Refining Co.	40	
Griswold Oil Co.	10	
Gulf Production Co.	65	
Middle States Oil Co.	5	
Texhoma Oil & Ref. Co.	40	
Miscellaneous	1,855	
Archer County—		
American Ref. Co.	445	
Griswold Oil Co.	490	
Gulf Production Co.	430	
Humble Oil & Ref. Co.	110	
The Texas Co.	860	
Texhoma Oil & Ref. Co.	2,085	
Miscellaneous	14,975	
Petrolia—		
Gulf Prod. Co.	95	
Magnolia Petroleum Co.	65	
The Texas Co.	95	
Miscellaneous	210	
Total		21,875

Stephens County

Empire Gas & Fuel Co.	45	
Gulf Prod. Co.	1,790	
Humble Oil & Ref. Co.	1,440	
Magnolia Pet. Co.	990	
Mid-Kansas Oil & Gas Co.	1,765	
Prairie Oil & Gas Co.	930	
Sinclair Oil Co.	210	
The Sun Co.	1,415	
The Texas Co.	3,250	
T. & P. Coal & Oil Co.	1,045	
Miscellaneous	8,470	
Total		21,350

Eastland County

Empire Gas & Fuel Co.	20	
Gulf Prod. Co.	775	
Humble Oil & Ref. Co.	160	
Magnolia Pet. Co.	535	
Mid-Kansas Oil & Gas Co.	30	
Panhandle Ref. Co.	470	
Prairie Oil & Gas Co.	640	
Sinclair Oil Co.	410	
The Sun Co.	40	
The Texas Co.	245	
T. & P. Coal & Oil Co.	995	
Miscellaneous	3,670	
Total		7,990

Other Fields

Strawn—		
T. & P. Coal & Oil Co.	205	
Miscellaneous	440	
Moran—		
Empire Gas & Fuel Co.	175	
Humble Oil & Ref. Co.	815	
The Texas Co.	210	
Texhoma Oil & Ref. Co.	235	
Miscellaneous	2,790	
Coleman County—		
Miscellaneous	140	
Brown County—		
Miscellaneous	565	
Comanche-Eastland—		
Humble Oil & Ref. Co.	350	
Empire Gas & Fuel Co.	10	
Magnolia Pet. Co.	1,400	
Mid-Kansas Oil Co.	215	
Prairie Oil & Gas Co.	305	
Sinclair Oil & Gas Co.	75	
The Texas Co.	815	
T. & P. Coal & Oil Co.	90	
Miscellaneous	3,370	
Young County—		
Gulf Production Co.	205	
North American Ref. Co.	210	
Sinclair Oil & Gas Co.	250	
Okla. Pet. & Gas Co.	125	
The Sun Co.	65	
Panhandle Ref. Co.	375	
The Texas Co.	205	
Miscellaneous	3,320	
Reagan County	150	
Jack County	30	
Total		16,630
Total all fields		114,710
Total last week		116,104
Loss		1,394

HEALTH COMMISSION TELLS HOW TO AVOID GAS POISONING

(Continued from Page 70)

until it is burned. With this kind, combustion is usually complete unless the flame comes in contact with a cold surface, in which case carbon is deposited, and reduction of some of the carbonic acid gas to the deadly monoxide is liable to occur. In the non-luminous or blue flame type combustion is complete so long as sufficient air is supplied at the mixer and the flame does not come in contact with a cold surface.

Flues Should Be Used

Trouble may arise through an uniformed person tampering with the air adjustment, but it is more often due to the flame hitting some part of the apparatus purposely or otherwise. In the latter type of heater the only safe rule is to have a flue connection to carry off the products of combustion. What has been said regarding heaters applies equally well to gas logs, gas radiators and gas water heaters. The latter should always have flue connections because carbon monoxide is sure to be formed in large quantities when the hot flame strikes the copper coils chilled by the water they contain.

Artificial or illuminating gas before it is burned is poisonous in very small amounts. Therefore see to it that there are no gas leaks in your home, and notify your local company immediately if the characteristic odor of gas is apparent in any room. Flexible gas tubing rapidly becomes porous. It is far safer to have all gas connections made with metal pipe.

There are a number of other ways in which gas poisoning may occur: ordinary coal stoves and ranges will throw off a dangerous amount of carbon nonoxide if draughts are closed too tightly following the addition of fresh coal. Gas burners left lighted but turned low and gas pilots may go out if the gas pressure decreases sufficiently. Then when the pressure again increases unburned gas is thrown into the room and may not be detected quickly enough to avoid accidents, particularly during the night time. Never go to sleep in a closed room when there is a lighted gas heater, and never install a gas water heater in a bathroom.

Perhaps the most common condition resulting in gas poisoning, in recent years, at least, has been brought about because people have not realized that carbon monoxide is present in dangerous quantities in the exhaust from gasoline engines. No work should be done in closed garages with the automobile engine running.

Gas is used by over one-half of our population. Safety from gas poisoning depends on your observing the warnings which have been given in this health talk and in always taking pains that there is sufficient ventilation in the place or rooms where you are working, living or sleeping.

REPORT OF PROPOSED A. P. I. PIPE STANDARDS

(Continued from Page 34)

we will have the result of these tests, and would appreciate any suggestions that can be made to more definitely provide for this additional specification under drill pipe.

"It is very desirable that, as nearly as possible, a uniform joint in every particular be turned out by all the mills. To this end the committee will make a recommendation, in addition to the specifications hereto attached, providing for a uniform gauge made by a single gauge maker, the proper checking of the same from time to time, and such other details as may be necessary in order to avoid the present difficulties arising from attempts to use pipe or tubular goods from different mills on the same job, which it is practically necessary for the producer to do now.

A Limit on Depth

"It has been suggested that these specifications should provide for even deeper drilling than 7,000 feet, and possibly to 8,000 feet. This committee has carefully considered this, and is of the opinion that such greater depths will be so much the exception, within the next several years at least, that it would be impractical to impose larger sizes on the trade of all the strings of pipe, to permit the increased weights necessary for this deeper drilling. The increased costs would be too great on the material for the average well. We think, further, that where it is desirable to set casing at greater depths, the present sizes and weights can be made to answer the purpose, both by floating the casing in and by cementing, thereby increasing the wall strength. Certainly this can be done by the use of higher-carbon, seamless-steel pipe on the bottom of these longer strings much more safely than is being done at the present time in the few deeper wells that are being drilled with the character of material available.

"Any further suggestions from your sub-committee would be appreciated by us, and we should like to have these within the next 30 days as the committee hopes to complete its work and to make its recommendations finally and definitely as early as possible."

Proposed Specifications

The proposed A.P.I. specifications for steel and iron pipe for oil country tubular goods are given in detail below:

1. These specifications apply to lap welded and seamless steel and iron tubular goods for oil country purposes; covering line, drill, drive pipe, casing and tubing.

I—Manufacture

2. The steel for welded line pipe, drive pipe, casing and tubing shall be of good welding quality made by the Bessemer, Open Hearth or Electric process. The steel for lap weld drill pipe and all seamless pipe shall be made by the open hearth or electric process. Seamless drill pipe and its couplings shall be made of high carbon steel. Upset end drill pipe should have upset of sufficient thickness and heat treated if necessary to make joint as strong as body of pipe.

3. (a) The wrought iron shall be made from muck bars made from all pig puddled pig iron free from any admixtures of iron scrap or steel.

(b) *Iron Scrap.* This term applies only to foreign or bought scrap and does not include local mill products free from foreign or bought scrap.

(c) Open hearth iron.

II—Chemical Properties and Tests

4. Open hearth 99 per cent pure iron.

(a) The steel shall conform to the following requirements as to chemical composition:

Open Hearth

Bessemer Welded—Manganese, .30-.60; phosphorus, not over .11; sulphur, not over .065.

Welded—Manganese, .30-.60; phosphorus, not over .06; sulphur not over .06.

Seamless, Low Carbon—Manganese, .30-.60; phosphorus, not over .04; sulphur, not over .05.

Seamless, Medium Carbon—Manganese, .35-.70; phosphorus, not over .04; sulphur, not over .05.

Seamless, High Carbon—Manganese, .35-.70; phosphorus, not over .04; sulphur, not over .05.

5. (a) Analysis of two lengths of pipe in each lot of 400 or less of each size under 6 inches, and in each lot of 200 or less of each size 6 inches or over, may be made by the purchaser.

(b) If the analysis of only one length of pipe does not conform to the requirements specified, analysis of two additional lengths of pipe from the same lot shall be made, each of which shall conform to the requirements specified.

(c) Drilling for analysis shall be taken from several points around each length of pipe, selected for test.

III—Physical Properties and Tests

6. (a) The material shall conform to the following minimum requirements as to tensile properties:

Steel

Tensile strength lbs. per sq. in., welded Bessemer, 50,000; O. H., 45,000; seamless low carbon, 48,000; seamless medium carbon, 62,000; seamless high carbon, 75,000.

Yield point, lbs. per sq. in., welded Bessemer, 30,000; O. H., 25,000; seamless low carbon, 30,000; seamless medium carbon, 35,000; seamless high carbon, 45,000.

Elongation in 8-in. per cent, welded Bessemer, 20; O. H., 22; seamless low carbon, 40 (in 2-in.); seamless medium carbon, 25 (in 2-in.)

Elongation in 2-in. per cent, seamless low carbon, 40 (in 2-in.); seamless medium carbon, 25 (in 2-in.); seamless high carbon, 20.

Where the term "pipe" is used in this specification, it is intended to cover all classes referred to in Section 1.

Wrought Iron—Tensile strength, lbs. per sq. in., 42,000; yield point, lbs. per sq. in., 24,000; elongation in 8-in., per cent, 12.

Open Hearth Iron—Tensile strength, lbs. per sq. in. 48,000; yield point, lbs. per sq. in., 30,000; elongation in 8-in., per cent, 26.

(b) The yield point shall be determined by the drop of the beam of testing machine.

7. (a) Each length of Oil Country tubular material shall be tested at the mill to the hydrostatic pressures specified in tables appended. Lap welded pipe shall be struck while under test pressure, a heavy blow with a 2-lb. hammer every 2 feet along its top side with seam turned down.

(b) The test pressure on sizes not listed should not exceed those required by the formula:

$$P = \frac{2St}{D}$$

In which P equals Pressure in pounds per sq. in.

S equals Allowable fiber stress, 16,000 lbs. per sq. in. for steel pipe, 14,000 lbs. per sq. in. for Open Hearth Iron, and 12,000 lbs. per sq. in. for wrought iron pipe.

t equals Thickness of the wall in inches.

D equals Outside diameter in inches.

Flattening Tests

8. (a) The crop ends cut from each length of steel lap welded pipe shall withstand flattening between parallel plates, until the distance between the plates is one-third the outside diameter of the pipe, without cracking or showing any injurious flaws. The test shall be made with the weld approximately 45 degrees from the point of maximum bend. If any section fails, another piece may be cut. Should the second test fail, the pipe shall be rejected.

(b) Seamless.

(c) The crop ends cut from each length of lap welded wrought iron pipe shall be flattened until broken. The test shall be made with the weld approximately 45 degrees from the point of maximum bend. The test piece must show a good weld and the fracture shall have a fibrous appearance. If any section fails to meet these requirements, another piece may be cut. Should the second test fail, the pipe shall be rejected.

(d) Open Hearth Iron.

Drift Tests

(e) Where inspection representing purchaser desires to witness these tests, reasonable notice shall be given of the time at which the run is to be made. Precautions shall be taken so that crop ends can be identified with respect to the length from which they are cut.

9. (a) Each length of casing and drive pipe shall be drifted with cylindrical mandrels of the following dimensions:

For sizes up to 8⅝-in. O.D. Inc., diameter ⅛-in. smaller than nominal I. D. of pipe; length, 6 inches.

For sizes over 8⅝-in. O.D. to 14-in. O.D.

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Inc., 5/32-in. smaller than nominal I.D. of pipe; length, 12 inches.

For sizes over 14-in. O.D., 3/16-in. smaller than nominal I.D. of pipe; length, 12 inches.

(b) All tubing shall be drifted to insure free passage of standard plungers 1/16-in. smaller than nominal inside diameter of tubing.

10. (a) Tension test specimens shall consist of sections cut longitudinally from pipe, they shall not be flattened before testing.

(b) All testing shall be done cold.

11. One of each of the tests specified in Section 6 may be made on a length in each lot of 400 or less, of each size under 6 inches, and in each lot of 200 or less, of each size, 6 inches or over.

12. If the result of the physical tests of any lot do not conform to the requirements specified in Section 6, retests of two additional pipes shall be made, each of which shall conform to the requirements specified.

IV—Standard Weights

13. The standard weights for oil country tubular material of various sizes are given in tables appended.

14. The weight of any length of pipe shall not vary more than 5 per cent under or 10 per cent over that specified; but the carload weight shall not vary more than 5 per cent from the nominal weight. Each joint shall be weighed separately with coupling screwed on, but with thread protector removed.

15. Unless otherwise specified, pipe shall be furnished as to minimum lengths in accordance with the following.

Tubing and Rotary Drill pipe, 20 feet.
Line, Casing and Drive pipe, 18 feet.

Jointers (two short lengths connected by couplings) may be shipped to a maximum of 5 per cent of the order for line, casing and drive pipe. No jointers shall be shipped on tubing or rotary drill pipe orders.

V—Workmanship and Finish

16. For pipe 1½-in. or under in inside diameter, the outside diameter at any point shall not vary more than 1/64-in. over nor more than 1/32-in. under the standard size. For pipe 2-in. or over in inside diameter, the outside diameter shall not vary more than 1 per cent over or under the standard size. Variation in wall thickness shall not be more than 3 per cent plus or minus in lap weld pipe, and not more than 5 per cent plus or minus in seamless.

17. Unless otherwise specified, pipe shall conform to the following regular practice:

(a) Each end of pipe shall be threaded.

(b) All threads shall be in accordance with the American standard and cut so as to make a tight joint when the pipe is tested at the mill to the specified internal hydrostatic pressure. The variation from the standard, when tested with the standard working gauge, shall not exceed a maximum of one turn either way. For thread diameters of A.P.I. casing, see list of sizes.

(c) Threads in couplings and on casing and pipe shall be so nearly alike in form and size, and so well finished, that joints can be screwed together with light lubricant far enough to make a tight joint and unscrewed several times without injury to threads.

(d) The taper of threads on both pipe and couplings shall be tested by approved methods at intervals sufficient to insure that the taps and dies are in proper adjustment.

The variations in taper shall not exceed the following limits:

When taper per foot is specified as 3/16-in., for low carbon (maximum taper), ¼-in; steel and iron (minimum taper) 5/32-in.; for medium and high carbon (maximum taper), 7/32-in.; for medium and high carbon (minimum taper), 11/64-in.

When taper per foot is specified as ⅜-in., for low carbon (maximum taper), 7/16-in.; steel and iron (minimum taper), 11/32-in.; for medium and high carbon (maximum taper), 13/32-in.; for medium and high carbon (minimum taper), 23/64-in.

When taper per foot is specified as ¾-in., for low carbon (maximum taper), 13/16-in.; steel and iron (minimum taper), 23/32-in.; for medium and high carbon (maximum taper), 25/32-in.; for medium and high carbon (minimum taper), 47/64-in.

(e) Solid tapped rings or split couplings shall be provided as thread protectors on all sizes, and their threads as carefully made and finished as those in couplings.

Couplings

(f) Each length of threaded pipe shall be provided with one coupling, having clean-cut threads of such a pitch diameter as to make a tight joint. Couplings may be made of wrought iron or steel, seamless or welded. When couplings are made of steel they shall be electro-plated on the threads, heat treated or treated by some other method of manufacture which will eliminate the chance of galling.

(g) No tapers of couplings to be secured by expanding.

(h) When couplings are screwed on at the mill a high-grade lubricant shall be applied to coupling and casing threads before making up joint, and to prevent rust, all exposed threads shall be thoroughly greased.

(i) Couplings shall be tapped concentric so that the axes of the threads of the two ends are closely in line. Couplings shall be tested for alignment by screwing onto a threaded piece carefully centered in a lathe; in the outer end of coupling is screwed a lathe-turned piece which will give a measured length of about one foot on which the alignment of the coupling threads may be determined by an alignment indicator when rotated in the lathe. Other approved means of measuring alignment may be used. Couplings shall be in line within ¾-in. in a length of 20 feet on all tubular goods except drill pipe. Couplings on drill pipe shall be in line within ½-in. in a length of 20 feet. At least one coupling shall be taken from each lot of 100 or less. In case this coupling fails, two more couplings may be taken from the same lot, each of which must be within the alignment specified, otherwise the lot shall be rejected. In any case the manufacturer may test rejected couplings individually if desired.

18. The length, the test pressure in pounds and class of material shall be stenciled on each length of pipe, and on sizes 6 inches and larger, except dipped or coated pipe, the weight of each length shall be stenciled. Approved abbreviations may be used. Size and weight per foot to be stamped on each joint near shop end.

19. The finished pipe shall be reasonably straight and free from injurious defects. All burrs at the ends of the pipe shall be removed.

VI—Inspection and Rejection

20. The inspector representing the purchaser shall have free entry, at all times while work on the contract of the purchaser is being performed, to all parts of the manufacturer's works, which will concern the manufacture of the pipe ordered. The manufacturer shall afford the inspector, free of charge, all reasonable facilities to satisfy him that the pipe is being furnished in accordance with these specifications. All tests and inspection shall be made at the place of manufacture prior to shipment, unless otherwise specified, and shall be so conducted as not to interfere unnecessarily with the operation of the works.

21. Material which shows injurious defects subsequent to acceptance at manufacturer's works, or which proves defective when properly applied in service, may be rejected and the manufacturer shall be notified. No rejections, under these or any other specifications, to be stamped with the A.P.I. stamp, or sold as A.P.I. pipe.

Suggested Test for Drill Pipe

As the greater strains in drill pipe are different from those in other tubular goods, it is suggested that in addition to the tests enumerated in specifications, there should be rotating tests made by taking two joints of pipe with the collars on and, screwed together as they would be in practice, placed in a machine and rotated a given number of times. The middle to be deflected by a weight, or otherwise, sufficiently to produce a fibrous stress of form, say, 35,000 to 38,000 pounds per square inch. The number of rotations before failure occurs to be determined later.

CENTRAL WEST

(Continued from Page 44)

tion 36, and drilled a duster in a second test on the D. Finney, Section 25. Same company made a location for a test on the Ora Elickinger 68 acres, Section 8.

The Ohio Fuel Gas Co. has made a location for an important wildcat well on the Margaret C. Foster 69 acres, Section 18, Clinton Township, Vinton County. This is in practically new territory.

The Ohio Fuel Gas Co. has made additional important locations for wildcat wells in Perry Township, Hocking County. One is on the Alice McClelland 120 acres, Section 14, and the other on the James A. Friend 41 acres, Section 27.

In Ripley Township, Holmes County, the Central Ohio Gas Co. drilled an average gas well at its No. 4 J. T. Tschantz, Section 13. In Monroe Township, same County, the East Ohio Gas Co. made a location for a test on the C. G. Jarvis 97 acres, Section 11, and drilling a test on the Thomas P. Connor 61 acres, Section 12. Logan Gas Co. made a location for a test on the H. G. Huffman 160 acres, Section 33, Washington Township, same county. The same company has started the drill at its test on the Martin Mizer farm, in Newcastle Township, Coshocton County.

Jackson County is getting a nice play. In Washington Township the Ohio Fuel Gas Co. drilled a very light gas well at a second test on the S. B. Tripp, Section 12, and is drilling a second test on the Steve Tripp, same section, and made a location for a test on the Mary E. Tripp 80 acres, Section 13. Same company made a location for a test on the A. S. Dempsey 210 acres, Section 30, and for No. 1 W. W. Neary 19 acres, Section 21, Milton Township. The Ohio Fuel Supply Co. drilled a light gas well on the A. R. Peters, Section 13, Lick Township, and is drilling its No. 2 William Steele, Section 13, Franklin Township.

In Carthage Township, Athens County, the Logan Gas Co. made a nice gas strike in No. 4 A. J. Russell, Section 5, and also a light gas well in a second well on the W. and H. Dye, Section 12. This company made a location for No. 3 W. S. and Mary Dye 93 acres, Section 12, and for No. 1 Arthur Cole 83 acres, Section 4. The Ohio Fuel Supply Co. drilled a light gas well in a test on the Elmer Dunlavey, Section 5. The gas in this well was found in the Big Injun formation.

In Chatham Township, Medina County, Brinker Brothers and others' No. 3 Addie M. Buchannan, Lot 6, proved a duster in the Berea sand at 575 feet.

Illinois Field

Quietude prevails in the Illinois producing areas, although the drill is kept moving in the Ava Field of Jackson County. The well on the McBride farm, Section 12, Bradley Township, of this county, is a little surprise, as it came in a duster where one was least expected, but this does not affect the further developments of this promising field. The Gerberding farm well of the Mid-Egypt Oil & Gas Co., in Section 14, in advance of production, is being cleaned out after a shot and looks like it will make a commercial producer. The oil tests 38½ gravity, the best crude yet found in the Ava Field. Another location has been made for No. 3 Gerberding farm. The same company is drilling No. 9 Carter and McComb & Williams farm, both in Section 12, Bradley Township. The Mid-Egypt Co. must be given much credit for its operations in the Ava Field, having drilled close to 30 wells and has secured a nice production of natural gas, also oil, and is marketing both products. The shallowness of the pay sands at around 1,000 feet makes development work rather light in comparison to some of the deep sand fields.

In Dennison Township, Lawrence County, in the Bridgeport Field, the Big Four Oil & Gas Co.'s No. 18 on the L. M. Seed, Section 21, produced 10 bbls., from the Buchanan sand at 1,357 feet. In Bond Township, same county, J. D. Toomey's test on the L. D. Miller, Section 30, pumped 5 bbls. at 900 feet.

In Mt. Carmel Township, Wabash County, George Porter and others are getting ready to start drilling an important test well on the Veihman farm, Section 2, about 4 miles northwest of Mt. Carmel. This is 4 miles south and about 3 miles west of the Wright Pool and close to the same distance south of the hamlet of Friendsville.

W. M. Smith, of Washington, Pa., has moved a standard rig on Bald Knob, near Alto Pass, in Union County, Illinois, and is going to drill several tests in that locality, where he controls a large acreage of structural land. A number of wells have been drilled in Union County during the past several years, but no commercial producers have been found.

Indiana Field

Only one completion is reported from the Indiana Field during the week and that in Section 3, Center Township, Gibson County, in the Princeton Field, where J. H. Young and others brought in an important test on the F. Wilderman, that showed 60 bbls. flush. The top of the sand was found at 1,461 feet and drilled only 3 feet in the sand.

Operations were at a low ebb in all parts of the eastern Kentucky Fields, not even the Union Gas & Oil Co., Petroleum Exploration, Carter Oil or any of the larger operating companies reporting a completion. No completions are reported by the Cumberland Pipe Line Co. from Somerset east to the West Virginia State line, something out of the ordinary. The Cumberland Co.'s runs for the week totaled 87,641.27 bbls., for a daily average of 14,606.88 bbls. This company is constructing two additional 55,000-bbl. storage tanks on its tank farm at Glenhayes, south a few miles from Louisa, and practically taking the production of the Eastern Kentucky Field.

Petroleum production in eastern and central portions of Kentucky has been on the increase the past month. Better facilities for handling the production in Magoffin, Lawrence and Johnson Counties and the connecting of newly developed leases to the pipe lines' account for the increased yield of the Big Sandy Field. Johnson County production has now passed the 100,000-bbl. a month figure, while Magoffin County, adjoining, is producing close around 150,000 bbls. monthly. Lawrence County's output is averaging close to 50,000 bbls. monthly. The Cumberland Pipe Line Co. has covered these counties with a network of pipe lines, making all developed leases available to market. The trunk pipe line has also been increased in capacity.

Word comes from the Beaver Creek Field of Floyd-Knott Counties that an excellent oil showing has been encountered in a well drilled on the Alex Martin farm, in the Corniferous sand at a depth of 2,800 feet. This well is something like 2 miles from the recently completed 15,000,000-foot gas well. The well is in the process of being given a shot. The shot was lowered in the well but at last report the shooter was unable to get the shot off. If this find is true, it is one of the most important for the Kentucky Field for a long time. This section of the State has developed into an excellent gas producing region and some big finds have been made. Much of this natural gas will be utilized in the making of carbon black.

HELPFUL TO PLANT SUPERINTENDENTS

The article on page 84 of this week's issue dealing with special features of refinery construction is of especial interest to plant and construction superintendents.

In a subsequent issue an article on refinery operation will be published.

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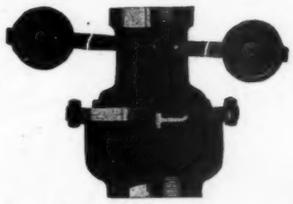

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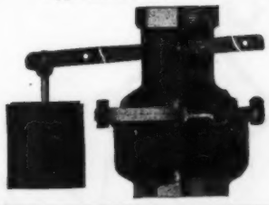

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Ex-Secretary Fall Explains His Tour With H. F. Sinclair

WASHINGTON, Oct. 24.—Former Secretary Fall today explained to the committee on public lands, investigating the Teapot Dome contract with Harry F. Sinclair, just how he had become associated with Mr. Sinclair in going to Russia.

After he left office, he said, Mr. Sinclair invited him to go abroad and in London they met representatives of the Chita Government. In the discussion of Russian oil concessions the first concession considered was abandoned on his advice because he insisted that if any of the lands had been confiscated during the revolution the owners should be compensated. The representatives of the Chita Government would not agree to this and the contract was not signed. Then they entered into negotiations for the concession for oil rights in northern Shakhalin Island and he advised against that because it contained a provision that it should not be effective unless the United States recognizes the Russian Government within five years. He thought that provision would prove embarrasing. However, that concession was signed.

Mr. Fall said he had received no salary from Mr. Sinclair at any time but did receive his expenses of $10,000. He had been offered employment by Edward L. Doheny but also declined that. He made his position clear and remarked that if he should take a salary from Mr. Sinclair it would be one of sufficient size to interest him.

Mr. Fall called forth great interest when he explained a purpose he had had in drilling the Teapot Dome, which he said was known to his chief, the late President Harding.

"I had it clearly fixed in my mind," he said, "that the people of the United States were insisting upon a restriction of military armament. It was my idea that, if the navy of the United States was to be cut down, by securing this oil and putting it where they could use it the efficiency of the Pacific would be more than doubled. I think the commander-in-chief had the same idea. I venture to say the efficiency of the Pacific fleet of the United States today is more than doubled already."

MEXICAN FIELDS

(Continued from Page 48)

rigging; No. 33, cemented 8-inch in the San Felipe at 1,375 feet; No. 34 has done the same at 1,400 feet; No. 37, is drilling in shale at 950 feet.

Other Sectors

In the older sectors of the Panuco Field, field operations are as follows: La Corona Petroleum Co.'s No. 66 Salvasuchi is drilling in gray lime at 1,680 feet, showing 200 bbls.; and No. 78 there is a derrick. In Potrero del Ojital, its No. 72 is spudding. East Coal Oil Co.'s No. 429 Ingenio is drilling in gray limestone at 1,510 feet. International Petroleum Co.'s No. 6, Lot 5 Tanchicuin, has shut down for repairs in a white lime at 2,705 feet; No. 7, same, drilling in gray lime at 1,850 feet. McGinness and others No. 9 Halcon is drilling in gray lime at 2,090 feet. New England Fuel Oil Co.'s No. 5 Cruz is drilling in gray lime at 1,775 feet; No. 8, same, is rigging; and No. 12 San Manuel, drilling in shale at 110 feet. National Lines of Railways,' No. 3 Maguabes (Federal zone) is heading 200 bbls. at 1,610 feet, where the drill is in limestone. Vera Cruz Mexican Pet. Co., No. 1, Lot 1, Buena Vista, has cemented 8-inch in a hard lime at 1,400 feet. Sol Oil Co., another federal zone operator, No. 1 Tanchisol, is drilling in gray shale at 1,080 feet. Transcontinental Petroleum Co.'s No. 13 Barbarena, is drilling in lime at 1,585 feet, and No. 3 Paciencia, north of Cacalilao, is drilling in shale at 920 feet.

In the South Fields, Huasteca Petroleum Co. (Mexican Petroleum) No. 2 Cerro Azul, is drilling in brown shale at 1,960 feet, and it is moving in material for No. 35 and clearing roads to location for No. 36. In Tierra Blanca, Huasteca No. 7-B is drilling in limestone at 2,1 feet; No. 13-A, drilling in gray lime stone at 2,327 feet, and No. 19-A, drilling in a similar formation at 2,140 fe In Tres Hermanos, its No. 3-A is drilling in basalt at 2,705 feet, and No. 6 is drilling in broken shale at 2,435 feet. In Moralillo, its deep test, No. 1-A, is drilling in gray shale at 3,795 feet. In Casiano, its No. 10-A, Lot 160, Chinam has cemented 10-inch in a rock at 1,1 feet; and No. 13, Lot 157 Chinampa, drilling in gumbo at 1,475 feet. Cru Oil Corp.'s No. 5, Lot 199, Amatlan, cemented 10-inch in shale at 821 fe

GULF COAST

(Continued from Page 48)

pumper and its No. 3 Vincent is bail at 2,250 feet. The Edgerly Petrol Co.'s No. 1 McCoy is drilling be 3,345 feet with a derrick up for No. Vincent. The Just Oil & Refining C is rigging No. 2 Rogers. The Vi Petroleum Co.'s No. 10 Rescue is dri ing at 2,000 feet and No. 23 Gray de ening. The Texas Co. is rigging No. Gray. The Gulf Refining Co.'s No. Star is drilling at 1,834 feet.

In the Edgerly Pool, The Lake Charl Oil Co.'s No. 2 Fairchilds might be cal a saltwater hole. It is making arou 500 bbls. of fluid, of which 5 bbls. oil at 2,775 feet. A. L. Gibson is setti a liner in No. 10 Landry. Bottom of hole is at 2,775 feet.

Semi-Pools and Wildcats

Stratton Ridge, a saline dome in Br zoria County, got the front of the p troleum stage this week when the Fr port Sulphur Co.'s No. 11 Dannebaum was credited with 200 bbls. per day the beam at 4,390 feet. The oil show 29 gravity. The Fairchild Petroleu Co.'s No. 1 Boggs there is now boili at 4,550 feet, with screen set in 40 fe of sand. It is 300 feet from No. Dannebaum. Both are on the northea side of the dome.

The Texas Exploration Co.'s No. Warren ranch on the north side of t Hockley Dome in the northwestern pa of Harris County, is shut down. La week it showed for a 25-bbl. well at 1,5 feet. No. 14 Warren is drilling. Th Gulf Production Co.'s No. 1 Trustee the west side of the San Bernard Riv in Wharton County, where dome form tions were found recently, is also id At Big Hill in Jefferson County, anothe semi-pool, the Houston Oil Co.'s No. P.pkin is deepening at 3,087 feet a No. 6 is drilling below 1,550 feet wi No. 1 Staiti shut down after setting casing. Off the dome to the east th Gulf Production Co.'s No. 1 McFadd is drilling around 1,600 feet. At Hig Island in Galveston County, which still another semi-pool, the Cox test standing at 750 feet with 60 feet of o in the hole. The Yount-Lee Oil Co. No. 1 Gilbert is shut down and the Gu Coast Development Co. is setting casi in its No. 1. The Sun Oil Co.'s No. Cade is standing idle. West of the cit of Galveston on Galveston Island, t Magnolia Petroleum Co.'s No. 1 Alle is in a hard, packed sand showing wat at 4,425 feet.

Among the purely wildcat tests, t Neils Esperson Estate's No. 1 at Green Switch, 10 miles east of Houston, w abandoned at 5,003 feet. It is the deepe wildcat test in the Harris County. Deep holes have been drilled in the Humb and Goose Creek Pools. A location h been made for No. 2. The South Li erty O.l Co.'s No. 1 Rivere in Liber County cored 16 feet of sand at 2,9 feet, showing gas and some oil. 9 inch casing has been set for a test. Th Houston Oil Co. is rigging No. 1 Hayn near Wallisville in Chambers County a Hindman & Keeble are installing heavier rig to deepen their No. 1 the

The Sun Oil Co. is making a deep test west and north of the Humble Pool.

Southwest Districts

In the Somerset Pool, the Frontier Oil Co. is drilling No. 1 McKinney and the Witherspoon Oil Co. No. 1 Fuller. The Texasco Oil Co. is rigging No. 1 Peeler. The Houston Oil Co.'s No. 3 Cartwright in Live Oak County is showing gas at 1,645 feet. The G. M. Co.'s No. 1 Cox in McMullen County is reported good for 150 bbls. at 765 feet.

Laredo Fields

The Laurel Oil Co.'s No. 4 in the Mid-Ojulas district in Webb County is a 150-bbl. producer at 1,685 feet. It offsets Quigg & Co.'s No. 2 on the south. Same company is deepening No. 2 in the Schott district, which came in originally as a gas well. The Cin-Tex Oil Co.'s No. 3 Garcia is rated at 150 bbls. at 1,772 feet and the Magnolia Petroleum Co.'s No. 15 Garcia at 100 bbls. at 1,710 feet. The Schott Oil Co.'s No. 19 is drilling, as is J. J. O'Heran's No. 4 on the escarpment. The True White Oil Co. is starting No. 1 Ochoa. The Carolina-Texas Oil Co. is resetting the liner in No. 5 Barnsley. The Cole Petroleum Co.'s No. 2, north of Bruni, set casing to test a sand showing oil around 3,550 feet.

Luling Field

The United North and South Oil Co.'s No. 1 Manford in Luling Field is around 2,440 feet with the bit reported in the Austin chalk. Same company's No. 1 Engelke is drilling below 2,400 feet and No. 1 Shanklin around 2,109 feet. The company is starting No. 1 McKean and No. 1 Nichols. The Plateau Oil Co.'s No. 1 Blanks is below 1,875 feet, south of Seguin. The Tieman Oil Co.'s No. 1 Fee, 2 miles east of Seguin, is said to show gas and oil in a sand at 1,910 feet. Schuenmann and others' No. 1 Coupe is below 1,650 feet. The Magnolia Petroleum Co. is drilling No. 1 Hall, southeast of Kingsbury with a location for No. 1 Imhoff. Burnam & Co.'s No. 1 Imhoff has been spudded in. The Magnolia Petroleum Co.'s No. 5 Merriweather in the field showed for a 250-bbl. well, but the water broke in and it is now being drilled deeper. The Joliet Oil Co.'s No. 1 School House is making water. The Magnolia Petroleum Co. has started No. 3 C. Byrd and the United North & South Oil Co.'s No. 2 W. F. Mercer, both in the original part of the field. Other wells drilling or starting in the field or off the structure include: J. E. Walsh and Prairie Lea Petroleum Co.'s Nos. 3 and 4 Merriweather. The Royal Oil Co.'s Nos. 4 and 5 Tabor with locations for Nos. 6, 7 and 8. C. C. Canan's No. 1 Henry, United North & South Oil Co.'s No. 2 M. Mercer and No. 5 Tabor; Seals Creek Oil Co.'s No. 2 Proctor; Grayburg Oil Co.'s No. 1 Blackwell and No. 1 Fielder and Rydell Petroleum Co.'s No. 3 C. Byrd.

Over in Gonzales County, the J. K. Hughes Co.'s No. 3 Stephens is drilling around 1,500 feet. No. 2 was abandoned. W. O. Wood of Kansas City, Mo., is rigging No. 1 Memeley, located 12 miles east of Gonzales. The test near Smiley is reported showing gas at 1,500 feet.

Milam County Shallow Sands

The Bartlett-Minerva Oil Co. has started No. 1 Ritteg. Plewkett & Co.'s No. 2 Gasten is rigged. The Texas Petroleum Development Co.'s No. 4 Neihaus is drilling.

Very few wildcat wells are drilling in the south Louisiana parishes. Bissonnet and others are below 2,700 feet in Jeff Davis parish. Guidroz and others are rigging No. 1 Begnaud in St. Martin Parish. The Union Sulphur Co. is drilling a test in St. Mary's Parish and the Grand Coteau Dome Oil Co. is rigging No. 1 St. Charles college in St. Landry Parish. The Vacuum Oil Co.'s No. 1 near Westlake, Calcasieu Parish, is drilling around 2,100 feet after getting dome formation and some oil sand between 1,000 and 1,129 feet. H. H. Giescke is starting No. 1 Hayes in the same parish.

CALIFORNIA REFINERY SEPTEMBER STATISTICS

Forty-one refineries operating on October 1, 1923, with an indicated capacity of 512,640 bbls. of crude oil, reported to the United States Bureau of Mines for September. These 41 refineries operated on an 86.9 per cent basis for their crude oil capacity.

(Note: The indicated capacity given in the report for August is in error, it should read 477,440 bbls., instead of 435,652.)

Output of refineries in California for September, 1923:

Oil Run to Stills

	Barrels
Domestic crude	13,382,560
Domestic partly refined	.....
Casinghead gasoline	84,485
Total oil run	13,467,045

Refined Products

Gasoline (gallon)	103,618,605
Kerosene (gallon)	17,296,559
Gas and fuel oils (gallons)	366,343,456
Lubricants (gallons)	8,674,579
Wax (pounds)	103,729
Coke (tons)	.....
Asphalt (tons)	42,561
Other finished products (gallons)	5,485,939
Losses (gallons)	8,853,141
Net production of domestic partly refined oils (gallons)	45,166,595

Stocks on hand at the refineries in California, September 30, 1923:

Crude Oil and Partly Refined Products

	Barrels
Domestic crude	6,409,185
Domestic partly refined	10,888,211
Total oils to be run	17,297,396

Finished Products

Gasoline (gallons)	144,099,126
Kerosene (gallons)	27 703,822
Gas and fuel oils (gallons)	511,220,421
Lubricants (gallons)	12,409,350
Wax (pounds)	252,081
Coke (tons)	.....
Asphalt (tons)	15,441
All other finished products (gals.)	220,433
Gross production of tops (gals.)	49,790,659
Gross stocks of tops (gallons)	371,452,299

Stocks of tops (gross) held at California refineries, (as reported to the Bureau of Mines; unit of gallons):

	1921	1922	1923
Jan. 31	14,512,303	79,855,999	38,190,541
Feb. 28	7,283,379	84,765,051	104,902,102
March 31	32,468,061	77,793,485	112,117,688
April 30	14,406,293	86,257,034	173,655,774
May 31	8 949,266	90,530,968	181,312,660
June 30	7,917,660	87,141,731	306,061,144
July 31	6,330,318	80,862,161	304,503,601
Aug. 31	8,005,527	64,305,025	334,552,846
Sept. 30	5,765 880	57,800,345	
Oct. 31	9,419.548	48,980,948	
Nov. 30	6,027,673	49,531,011	
Dec. 31	6,048,591	49,243,080	

CANADIAN FIELDS

(Continued from Page 52)

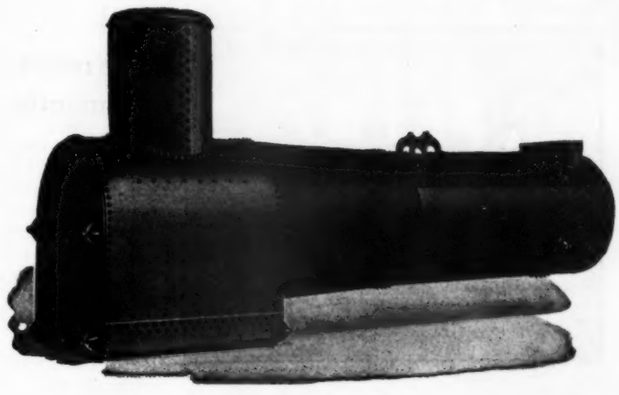
oil and lower grade crudes from the Montana fields. Approximately 50,000 bbls. of crude are already in storage.

In the Ontario fields, Eugene Coste & Co. No. 5, in Moore Township, Lambton County, which was started as a shallow test for gas, was discontinued at 958 feet depth, no results having been secured.

In Dawn Township, Lambton County, Eugene Coste & Co.'s No. 4 deep test is reported drilling at 3,750 feet, being 785 feet in the Trenton limestone, with no results. This well, which is expected to finish by next week, will be approximately 4,000 feet deep to the granite.

In Kent County, the Glenwood Natural Gas Co. test on the Hugh Shanks farm east of Port Alma is reported drilling close to 3,300 feet, or over 500 feet in the Trenton limestone, with no results, except a fair gas production in the Tilbury sand. This test will probably finish next week, and looks like a failure in the deep formation. Union Natural Gas Co. No. 248, old Truckenbrod farm, near Port Alma, for gas at 1,219 feet, 1,320 feet and 1,330 feet, with an aggregate production of 400,000 feet a day. The well is cased with 8¼-inch at 1,362 feet and the gas is handled between the 8¼-inch and the 10-inch with a casing head. Drilling is at 1,500 feet and will be continued to the Trenton limestone.

In Bruce County, the Mulberry Creek Oil Co. test for oil in Eastnor Township, near Spry, spudded in this week.



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They are constructed of steel, firmly riveted and caulked and are built according to the code for building adopted by the American Society of Mechanical Engineers, which code is now required in the State of Oklahoma. Every Kewanee Boiler will produce all that its rated capacity calls for. You are not experimenting when you use Kewanee but are buying a boiler that has been produced after all of these years of continuous building.

Hundreds of these boilers are and have been in use in the oil fields and have given the owners excellent service.

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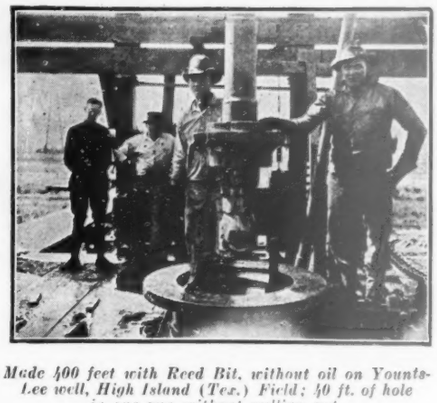
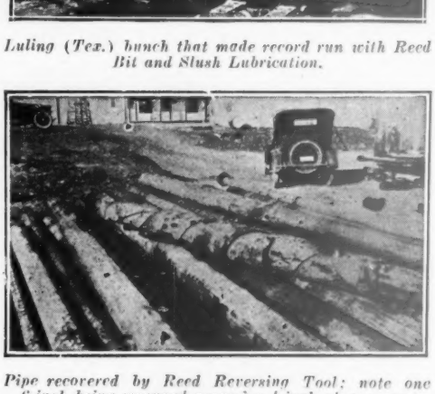
Sold by International Supply Co., Tulsa

$500,000 in Orders for Reed Bits and Reamers in 9 months



Made 400 feet with Reed Bit, without oil on Younts-Lee well, High Island (Tex.) Field; 40 ft. of hole in one run without pulling out.

Luling (Tex.) bunch that made record run with Reed Bit and Slush Lubrication.



Pipe recovered by Reed Reversing Tool; note one 6-inch being wrapped around a 4-inch pipe, recovering the latter.

Loading car with Reed Bits and Reamers for shipment to foreign countries.

This is one way to measure success of Reed Bits—but the best evidence of superiority is the widely spreading popularity of Reed Bits, run without oil.

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- Winger Overshots
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FLOODING AIDS RECOVERY OF CRUDE OIL

Profitableness, Advisability and Methods Before New York State Oil Producers' Association. Endorse Pennsylvania Grade Campaign. H. G. James' Address Is Chief Feature

By George Turnbull

WELLSVILLE, N. Y., Oct. 20.—Problems of flooding in the Allegany and Bradford oil fields were described and solutions for them given at the annual meeting of the New York State Oil Producers' Association held here. The need for advertising Pennsylvania lubricants also occupied a leading place on the program. The meeting was attended by more than 150.

The following officers were elected for the ensuing year: President, Lewis H. Thornton, Wellsville; vice presidents, E. J. Atwood, Andover, and George H. Bradley, Bolivar; secretary and treasurer, Frank E. Richart, Wellsville, N. Y. The new board of directors follows: Lewis H. Thornton, Wellsville; John P. Herrick, Olean, chairman; F. E. Richart, Wellsville; A. L. Shaner, Bolivar; N. V. V. Franchot, Olean; William Duke, Jr., Wellsville; Forest J. Wilson, Bolivar; J. A. Wilber, Bolivar; E. J. Atwood, Andover; W. J. Richardson, Wellsville; H. E. Goodrich, Richburg; J. H. Lester, Richburg; C. Congdon, Clarksville; R. B. Moore, Bolivar; S. B. Tuttle, Scio.

The leading address of the meeting was delivered by Horace G. James, of the Derby Oil Co., (published on page 54 of this issue of The Oil and Gas Journal). He told of the present conditions in the oil industry, went on record as in favor of a tariff on oil importations, made an appeal for greater cooperation in the industry and for more publicity concerning it. In respect to the latter he said, "We have never told the public about the dark features of the oil industry. We tell them about the big wells, the new fields and the enormous profits realized from a very few of the big wells. But we do not let them know of the dry holes and the great amount of money expended on them. The only information on field reports is furnished us by The Oil and Gas Journal and the Oil City Derrick."

Problems of Flooding

W. L. Russell of the New York State Geological Department, said there seems to be no doubt that the quantity of oil which will be obtained from flooding is vastly greater than could be obtained by simply pumping the wells, even allowing for still undiscovered pools. The amount of oil which may be extracted from an acre by flooding depends on the thickness of the oil sand. Some highly successful floods have extracted 10,000 to 12,000 bbls. per acre, but in these cases the sand was about 40 feet thick and very rich. A fair guess as to the yield of a 20-foot sand would be 5,000 bbls. per acre, but this means 20 feet of good pay sand. The average yield per acre depends on the average thickness which is hard to estimate, for many well logs classify shale breaks and parts of the sand too hard to produce oil as oil sand. The average thickness is probably about 20 feet, but may be as low as 15 feet.

Assuming the average thickness is 20 feet, the average yield per acre should be about 5,000 bbls. and the total yield for the whole field something like 300,000,000 bbls. At the same time, in the present stage of flooding, it is not possible to do more than guess concerning these figures. There has been considerable discussion about cross flooding. In some leases cross flooding has been very successful, while in other cases it has not worked at all. Mr. Andrus of Bradford has been very successful in cross flooding on his lease at Rixford. A study of his lease showed that there had been two entirely different types of cross floods.

No one seems to know just why it is that cross flooding will work in some cases and not in others, though it may be that the oil which has been pocketed is moved out by the cross currents. The only thing that can be suggested is to do as Mr. Andrus does: in case a well goes to water very gradually, and does not produce much oil, to dump the well on both sides of it and pump it for a time.

Packing Off Gas Sand

There is also considerable doubt whether to pack off a gas sand in the top of the oil sand. There are cases in which the gas sand has not been packed off and the flood works nicely, with apparently no water coming through it. On the other hand the water sometimes runs through the gas sand without getting much oil and floods out the lease. Mr. Kinley on his flood at Knapp Creek had difficulty with water going through the gas sand and flooding out neighboring wells. About 20 feet in the top of the sand was shut off by a packer, and the water was stopped. In this case the gas sand had fortunately not been shot, and an ordinary packer could be used. Apparently when the gas sand is finer than the oil sand it is possible to flood with

HEATING FLOOD WATER SUGGESTED

The influence of the application of heat to the recovery of crude oil, was discussed at the Wellsville, N. Y., meeting in a paper prepared by Alwin Schaller and Carl Bjornsson, which said a study of available information indicates that the oil bearing sands of New York State have an average porosity of 12½ per cent, and that when production by natural means ceases, at least 50 per cent of the oil remains underground.

The forces which oppose the extraction of crude oil from the sand are capilarity, adhesion and viscosity. Originally, their action was overcome by the natural gas contained under pressure with the oil. Production naturally ceased when this expelling force was spent. The process of displacing some of the oil with water, commonly known as "flooding," has rejuvenated the oil fields in this State.

Raising the temperature underground would increase the degree of extraction by decreasing the viscosity, and the adhesion and by liquifying the paraffin which often cements the pores of the oil sand.

The necessary heat can be supplied by heating the flood water. However, the number of heat units per pound of water at atmospheric pressure is not sufficient to increase the sand temperature enough to obtain any beneficial results. By heating the water under pressure the number of heat units per pound of water can be increased to secure the final temperature desired, provided the heat losses underground are not too great.

out the packer, but when it is coarser it is necessary to use one.

We now come to the mode of arranging the wells, and the pressures which should be used. It depends on a principle which all oil men will probably admit in theory, but they do not all put into practice. The production from the oil wells can be no greater than the amount of water which runs into the flood wells. The voids which were once occupied by the oil and gas that have already escaped are first filled up by the water. Then the water entering the flood wells displaces the oil into the oil wells. It is obvious that if twice as much water runs into the water wells, about twice as much oil will be displaced into the oil wells. This leads us inevitably to the conclusion that it is of fundamental importance to get as much water as possible to run into the flood wells; and also that it is not the number of oil wells produced that determines the total production, but the amount of water entering the water wells. A flood well with six oil wells drilled around it may not produce nearly as much oil as three water wells and three oil wells. The obvious result is that it is advisable to drill the flood wells in a line, and drill the oil wells at equal intervals along the line on both sides, for a line flood allows much more water to enter the sand than a circular flood. Also a line flood is less likely to pocket the oil than several smaller circular floods. It may be argued that the one well floods will eventually become line floods, and this is of course true; but they do not become line floods for many years, and a great deal of unnecessary expense may be incurred meanwhile.

Line and Circular Floods

Another method would be to compare the line floods and the one-well or circular floods directly. The average from a one-well flood with oil wells drilled about 125 feet apart around it would probably be 1½ bbls. per well per day for three years. The average for the line floods that have been tried is certainly much better. It must be admitted that it is impossible to arrive at any certain conclusion by this method, for the oil sands vary greatly from lease to lease and even from well to well, and there have not been enough line floods put in to get the average of large numbers of both types.

Another recommendation based on this principle that the amount of water entering the flood wells determines the production is that it would be advisable to put the water in under pressure at the surface. If the pressure on the sand is doubled, the production will be doubled. This is not a theoretical conclusion, but actually tried out and measured on the Thornton and McEnroe flood on Lot 17, Alma. The cost of a water pump capable of supplying 20 or more flood water wells is only $600 to $700 or less and even this expense may be lessened by putting the working barrel into a water well, as Mr. McEnroe does. An engine would probably cost $500 to $1,000. The great advantage is not only that it would increase the production, but it would not be necessary to drill the wells so close. Producers could take their choice between drilling wells the same distance apart, and getting twice the production per day, or drilling half as many wells per acre, and getting the same production. If the latter, the saving on a single fair sized lease would be many times the cost of the pumps and engines.

In Other States

The question naturally arises as to how much of the unflooded land in New York State can be flooded, and whether oil lands in other States may be flooded. It is necessary to know the principles which govern flooding. The laboratory experiments indicate that the reason flooding works in some cases and not in others is that a capillarity acts in fine sands and not in the coarse ones. Capillarity is the same force which causes water and other liquids to run into a sponge, fine sands, or any very small openings. In the coarse sands there is no capillary action between an oil and a water surface. In the fine sands, the water is drawn into the pores between the sand grains with some force, driving the oil out. The surfaces of the grains are cleared of the oil film which surrounds them, while in the coarse sand grains the oil film remains adhering to them after the water has passed through, and it is not possible to remove it by flushing with water. This is apparently the chief reason why flooding is so destructive in very coarse sands, like those of California, and so successful in very fine sands like those of the New York and Bradford oil fields. In the experiments on the loose sands it was found that capillarity begins to act when the diameter of the grains become less than 0.1 to 0.2 mm.

Capillarity is not the force which propels the flood through the oil sands. The hydrostatic pressure of the column of water is vastly greater. This hydrostatic pressure drives the flood along; capillarity causes it to extract the oil by cleaning it from the surfaces of the sand grains and gathering it into a mass.

Size of Sand Grains Important

The relative velocities of the flood vary with the pressure, and with the square of the diameter of the sand grains. If the diameter of the sand grains were increased 10 times, the velocity of the flood would be increased 100 times. Hence a single streak of coarse sand may ruin the lease for flooding, for the water would run very rapidly through this coarse sand, extracting very little oil, and flood out neighboring wells. In laboratory experiments tried with solid chunks of sandstone to represent oil sands, it was found in the case of the very fine sandstones, like the oil sands of the New York oil fields, flooding will get out most oil, while the sands coarser than 0.2 mm. compressed air or gas will extract most oil. Hence if the finest 10 per cent of the sand grains are less than 0.1 mm. in diameter and the sands are uniformly fine, flooding will extract the most oil. If the finest 10 per cent of the grains is coarser than 0.2 mm., compressed air or gas will give the greatest extraction. It is the finest 10 per cent of the grains in the coarsest lenses that is of greatest importance. These conclusions are supported by the field evidence, both in the New York oil field and elsewhere.

It seems likely that any oil sand may be flooded provided it is uniformly fine, composed of grains less than 0.1 mm. in diameter, and not too shallow or too hard and tight. In the New York oil field the old Rice Brook Pool and the portion of the Chipmonk Pool lying on the River Flats near Vandalia can probably not be flooded. It is possible the portion of the Scio Pool just southeast of Scio is too shallow to flood and it may be that some parts of the sands are too hard and tight to yield commercial wells. In certain areas there are lenses of coarse sand, which allow the water to run through them and swamp neighboring wells. With these exceptions some means will probably be found of flooding all the pools in New York State. In flooding a new area, operators should wait till they are sure the water is running into the flood well in sufficient quantities before they drill around it. In some cases producers have drilled several wells, representing a loss of thousands of dollars, only to find that no water was running into their flood well.

In other regions of the United States there are doubtless uniformly fine oil sands from which immense quantities of oil may be obtained by flooding. In many cases there are at present practical difficulties connected with flooding these districts, adverse laws, cheap oil and high drilling costs. The average number of wells drilled per acre in flooding is about three, and you can see how much profit the oil producers would make if the average price of the oil was only $2 and it cost $10,000 or $20,000 to drill a well. However, it might be possible to flood these regions by using pressure at the

(Continued on Page 112)

Hazard

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LAST MINUTE *from* OKLAHOMA

Eleven wells in the Wewoka Field, Seminole County, averaged 13,623 bbls. a day last week. The record by lease was as follows:

Farm, company—	No. Wells	Daily Prod.
Long, Atlantic O. P. Co. and Independent O. & G. Co.	1	265
Long, Independent O. & G. and Sapulpa Ref. Co.	1	285
Parker, Magnolia Pet. Co.	1	332
Foster, Prod. & Ref. Corp.	3	5,111
Long, Prod. & Ref. Corp.	1	391
Foster, Dixie Oil Co.	1	2,987
L. Foster Dixie Oil Co.	1	2,133
Long, Dixie Oil Co.	1	2,069
Parker, Dixie Oil Co.	1	60
Total	11	13,623
Total previous week	11	15,416
Difference	0	1,793

Cromwell and the Independent Oil & Gas Co.'s test, NW cor. NE SW, Section 15-10-8, Seminole County, found the top of the sand at 3,470 feet and drilled in 8 feet. It is good for 125 bbls.

The Magnolia Petroleum Co.'s No. 1 Parker, NE cor. SE NW, Section 32-8-8, Seminole County, was drilled to 3,188 feet, uncovering salt water at 3,187½ feet, which makes it appear to be an edge well. The salt water can be plugged off. The well is good for 290 bbls. a day.

The Transcontinental Oil Co.'s No. 2 Harjo, SW cor. NW, Section 23-13-7, Okfuskee County, got the top of the sand at 3,738 feet. The hole filled to 2,500 feet with oil. It was baled dry and drilled deeper, and at 3,753 feet salt water was found. Drilling was stopped at 3,756 feet. It stands with 1,000 feet of oil and 100 feet of water in the hole.

Munn and others' No. 3 McKie, CWL NE, Section 8-20-12, a little north of Tulsa, was drilled into what is described as the third pay in the Wilcox sand at 2,042 feet, and the well gauged 74 bbls. an hour with the tools in the hole. It will be drilled to the fourth pay which lies at 2,060 feet. It was shut down for tankage.

P. & R. MERGER RUMORS DENIED BY OFFICIALS

Reports current in Casper, Wyo., Tulsa, Chicago and other sections of the country that a merger affecting the Producers & Refiners Corp. and one of the other large oil companies was contemplated, were denied emphatically by officials of the concern said to be involved in the reported transaction. Frank E. Kistler, chairman of the board of the Producers & Refiners Corp., stated to the Chicago representative of The Oil and Gas Journal that there is absolutely nothing to any report of a sale of his company to any organization.

It was stated from Casper that the Producers & Refiners Corp. would be merged on October 24 with the Prairie Oil & Gas Co. The Independence, Kans., office of the Prairie denied this report and said there was no truth to it. It was also said the Standard Oil Co. of Indiana would take over the Producers & Refiners, but the statement of Mr. Kistler covered this rumor also.

FRANCO-AMERICAN OIL ORGANIZATION RUMOR

Negotiations are reported by the New York Journal of Commerce, as under way between leading French banking and industrial interests and a group of American oil men, which are expected to result in the formation of a huge new petroleum organization under French domination but with its management guided largely by Americans.

This is said to be in accordance with the new French policy, which, according to information coming from reported authorative sources, has been developed as the result largely of fears created in French naval and military circles by the rapid expansion of the great British oil companies throughout the world, but more particularly by the fact that Germany is now seeking to enter the oil fields and oil markets of the world. Reports from Paris told of meetings regarding the new national petroleum policy of France which were attended by representatives of all the French exploitation, refining and importing companies as well as by delegates from all banks interested in oil matters.

A Paris dispatch to the New York Herald says the plan for a French oil combination provides for a company with 150,000,000 francs capital, 60 per cent to be subscribed by refiners and 40 per cent by interested banks. The refiners favor division into A and B shares, the former, with multiple votes, to be subscribed by refiners and the latter guaranteed by banks and open to public subscription. While two government controllers may sit at meetings, the refiners oppose giving them a voice in the meetings or a right to intervene in the company's direction. The French Standard Oil, Sinclair Campagne Industrielle de Petrole, Deutsche de la Meurthe and des Marine are reported to be interested in the plan.

FORT WORTH REPORTS MARKETS SLUGGISH

FORT WORTH, Tex., Oct. 24.—Export orders approximating 300 cars of 64/66 gasoline were placed last week in North Texas for shipment prior to November 20, consequently these refineries are giving considerable attention to the manufacture of this grade, and, as a result, their offerings of New Navy are below normal.

Prices are sagging, the general quotations on Navy being 6¼ to 6½ as compared with 6½ and 6¾ the previous week.

There has been a noticeable falling off in the demand for kerosene the past week, resulting in a slight weakening in price, most quotations being at 3¾ with some few sales being made at 3⅝.

After enjoying an era of prosperity for the past 60 days natural gasoline is finally showing some signs of weakening and a lessening in the rather heavy demand heretofore prevalent. Prices are off ½ to ¼ cent.

There has been very little change in gas oil the past week, 32/36 gravity being quoted at 2¼ to 2½ with small stocks on hand. Owing to a good general demand for 38/40, more attention is being paid by the refineries to this grade, although as yet there has been no change in price, which remains at 3 cents.

After vainly waiting for the fuel oil demand which is usually in force at this time of the year, the North Texas refineries decided to move their increasing stock of this material, and as a consequence there has been a more favorable movement of fuel oil from this section, at prices of 65 cents in buyers' cars and 70 cents in sellers' cars.

OHIO GAS AND OIL MEN HOLD ANNUAL MEETING

COLUMBUS, Ohio, Oct. 23.—Approximately 1,500 oil and gas men attended the annual convention of the Ohio Gas & Oil Men's Association held here yesterday and today. New officers for the coming year were selected today as follows: President, T. C. Jones, Delaware, Ohio; vice presidents, J. M. Garard, Columbus, and E. F. Cloggett, Columbus; secretary and treasurer, W. H. Thompson, Columbus; directors, James J. McMahon, Toledo; L. H. Langdon, Cincinnati; K. C. Krick, Columbus, and Ralph W. Gallagher, Cleveland.

H. C. Cooper, chief engineer of the Hope Natural Gas Co., in the absence of Forest M. Towl, president of the Southern Pipe Line Co. of Pittsburgh, read a paper prepared by the latter and entitled "Oil Engines." Dana J. Demorest, of the Department of Mines and Metallurgy of Ohio State University, handled the subject, "The Transition From Natural Gas to Manufactured Gas."

ACTION OF GULF IN CUTTING GASOLINE PRICE SIGNIFICANT

By N. O. Fanning

NEW YORK, Oct. 22.—The Gulf Refining Co. threw a bomb into the Eastern gasoline market on Wednesday, October 17, by making a sweeping reduction of 2 cents per gallon in the tank wagon price throughout the territory in which it operates, involving 24 States, with the exception of Massachusetts, where the price was cut 3 cents. Other large and small refiners and marketers met the cut a day later, so that the Eastern refined oil market is on a tank wagon basis ranging from 14½ to 16½ cents, the latter figures being more general.

This action, so reminiscent of the radical cut put into effect by the Standard Oil Co. of Indiana in the Middle West last summer,, was taken by the Gulf Refining Co., according to its own statement, in order "to stabilize" the market. One of Gulf's largest competitors described it as "cleaning house." The reduction came as a surprise to the other large marketers in this territory.

Governor Smith, of New York, has joined some other State executives in inaugurating a price investigation. He put the matter into the hands of the State attorney general. This was partly at the request of the Acting Mayor of New York City, who charges that gasoline prices are too high, based on cost of production, transportation, etc. Of course it seems strange that such a thing should be undertaken when prices go down, as well as when they go up. Furthermore, there was no investigation in this State when prices were 5 to 10 cents per gallon above those prevailing at present.

The situation in the gasoline market here as a result of the new price structure is that the big refiners will have the market largely to themselves, inasmuch as Mid-Continent and Western Pennsylvania refiners will have to lose money on all they sell in competition with them. The dominating interests, however, have a chance to even up on other products. The writer does not undertake to assert that they can make much money on the present basis of gasoline prices.

Gulf vs. Standard Oil

The radical action taken by the Gulf Refining Co. is particularly significant because the Gulf is one of the very few really big oil refining companies which has not gone to California for its crude supply in recent months. In other words, Gulf's prices are based on the cost of producing, transporting and refining Mid-Continent and Gulf Coast crude, with a small amount of Mexican oil thrown in. This Mid-Continent crude, by the way, is the same which the small producers in that territory are unable to market at present, which indicates that Mid-Continent crude can be marketed at low prices if it is handled in the most economical manner.

In short, Gulf Refining, with its source of supply in the Southwest, takes the initiative in cutting the price in competition with the big Eastern refiners who are buying much of their crude in California. And the inference is that Gulf can sell more cheaply than the latter, a matter for Mid-Continent producer to ponder over.

In some quarters, the radical gasoline price reductions put into effect during the past few months by the Standard Oil Co. of Indiana and the Gulf Refining Co. are looked upon as attempts to embarrass those companies which have to go to California for their oil.

Lubricant Market Steady

Despite isolated reductions in the price of certain grades of lubricating oils, the market was generally firm, and the demand is holding up well. Many refiners are said to be pushing their sales of this product with a view to offsetting the lower returns on gasoline.

Fuel Oil in Good Demand

There is continued good demand for bunker fuel oil. Supplies are increasing due to larger imports from Mexico. This is believed to be responsible for lower prices. In some quarters further reductions in bunker oil quotations are expected, in view of the fact that large contracts closed with Shipping Board call for delivery at about 10 cents per barrel below the prevailing price at this port.

Oil Receipts Large

Continued large receipts of crude and refined oil at Atlantic Coast ports by water ruled during the past week. October will show record receipts, probably approaching half a million barrels daily. Receipts are running equal as to source, the three principal sources being the Gulf Coast, Pacific Coast and Mexico.

Export Kerosene Up

The Standard Oil Co. of New Jersey has advanced the export price of kerosene ½ cent per gallon. It is significant that the tank wagon price of kerosene along the Atlantic Coast is now only 2 or 3 cents per gallon below the tank wagon price of gasoline. Refiners, in order to continue in business, must make money, and if they cannot do so from the sale of gasoline, they must make it on other products.

The following table shows the estimated daily average receipts of crude and refined oil by water at the principal Atlantic Coast ports for the last two weeks, and for the months of September and August (in barrels):

	Week Ended		Month	
	Oct. 19	Oct. 12	Sept.	Aug.
New York...	215,000	304,000	193 000	214,000
Phila.	103,000	139,000	76,000	110,000
Baltimore ..	39,000	24,000	59,000	33,000
Boston	67,000	11 000	23,000	24,000
Fall River..	10,000	10,000	15,000	19,000
Providence .	39,000	11,000	21,000	23,000
Norfolk	11,000	.....	8,000	8,000
Charleston .	.....	.....	2,000	12,000
Miscel.	27,000	17,000	23,000	13,000
Total daily average ..	511,000	516,000	420,000	456,000

Mexican crude oil prices remain at about the same levels which prevailed during the preceding week.

RUSH TANK MATERIAL SPECIAL TO POWELL

HOUSTON, Tex., Oct 20.—A special train of 38 tank cars is making a record run from the plant of the Petroleum Iron Works at Sharon, Pa., to the Powell Field with material for steel tanks for the Humble Oil & Refining Co. It is the first special train to make such a long run with oil field material and is a demonstration of the fast accumulating stocks of crude and the urgent necessity of taking care of the new production at Powell. The Humble Co. has now approximately 5,000,000 barrels in storage in Navarro County and plans for the erection of steel tanks to accommodate 2,000,000 barrels additional by the first of the new year.

A broken wheel caused the derailment of four cars near Ohio City, Ohio, but the material was loaded on another car and the derailed cars replaced on the tracks in three and one-half hours.

B. A. SIMPSON DIES

B. A. Simpson, pioneer oil operator in southern Oklahoma, died suddenly at his home in Ardmore, Okla., last week. He had returned recently from an extended visit in Minnesota. Mr. Simpson became prominent with the finding of oil on his properties in what is now the Healdton and Hewitt Fields. Although he had sold most of his property there, he was regarded as an active member of the oil fraternity. He was born in Columbus, Colorado County, Texas, September 17, 1865. He is survived by his mother, Mrs. W. B. Simpson, of Denison, Texas; his wife, two daughters, Mrs. H. B. Fell, of Ardmore and Mrs. C. O. Gregg of Minneapolis; one son, Bert Simpson, Jr., of Los Angeles; three sisters, Mrs. E. Maltbie, of St. Louis; Mrs. H. C. Ashby, of Los Angeles, and Mrs. J. M. Crumpton, of Denison, and four brothers, James N. and S. B., of Dallas, Texas, and W. E. and A. O. Simpson, of St. Louis, Mo.

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CALIFORNIA FIELDS

(Continued from Page 38)

Long Beach during the past week. The company's honor well was No. 4 Harlow, which was finished at 4,800 feet and registered an initial production of slightly in excess of 4,000 bbls. It was completed with a 4¼-inch oil string and the oil, testing 26.2 degrees and showing a cut of 1 per cent, is flowing through a 1-inch bean under a pressure of 375 pounds. This new well brings the Petroleum Midway Co.'s production at Long Beach to 26,000 bbls. a day, its production being exceeded only by that of the Shell Oil Co. The biggest surprise of the week was W. R. Ramsey's No. 1 Coffin, located on the southeast side of the hill. This well was brought in from the deep sand at 5,002 feet and started off doing 3,000 bbls. a day of clean 26.1 gravity oil. It is flowing through a ¾-inch bean and the pressure gauge reads 700 pounds.

Shell Gets Most Production

Although the Shell Oil Co. didn't complete the largest well during the current week, the completion of No. 3 Nicholson and No. 2 Pickler gave the company the honor of completing the largest number of wells and the Shell, as a result of their combined output, increased its production more than any other individual company. Number 3 Nicholson was the larger of the two as well as the deepest, being brought in from 5,301 feet and showing an initial production of 2,150 bbls. Number 2 Pickler, a former producer from the upper sands, was redrilled and deepened to 5,251 feet and came in flowing slightly less than 2,000 bbls. a day. Both wells are flowing through 1¼-inch beans, the former, No. 3 Nicholson, showing a pressure of 600 pounds and the latter, No. 2 Pickler, 700 pounds. The oil from these two wells is clean and tests 26.5 degrees. The Shell, the largest operator in the field, has a daily production at Long Beach at the present time of 50,000 bbls.

The General Petroleum Co., after a delay of several weeks, finally put No. 1 Clock on production at 5,015 feet, and, although it has several hundred feet of drill pipe in the hole, drilled to 5,975 feet, it showed an initial production of 1,400 bbls. The oil from this well tests 28.1 degrees and shows a cut of 5 per cent. If mechanical trouble had not developed in this well it would have been the deepest producer in the State and would have undoubtedly shown a substantial production.

The Pomona Oil Co. and the San Martinez Oil Co. each completed a 1,000-bbl. well, there being very little difference in the initial output of each. The Pomona Oil Co.'s No. 1 was completed at 4,050 feet and is flowing through a ¾-inch bean under a pressure of 400 pounds. The oil from this well tests 22.9 degrees and shows a cut of 8 per cent. The San Martinez Oil Co.'s No. 1 Green was finished at 4,423 feet and is flowing through a ½-inch bean under a pressure of 750 pounds, the oil testing 25.2 degrees and showing a cut of one-half of 1 per cent. The San Martinez Oil Co. was one of the pioneers of the southeast side of the hill but it has only been recently that the company has met with success. The Crescent Oil Co. and the West Coast Crude Oil Co. completed the two smallest wells, the former's well No. 1 doing 600 bbls. a day, while the latter's new producer registered an initial production of 500 bbls. The Crescent's well was brought in from 4,805 feet and the oil tests 24.9 degrees, while the West Coast Oil Co.'s No. 1 struck the pay sand at 3,979 feet, the oil from this well testing 24.8 degrees. George F. Getty will probably show two completions next week. No. 3 finished at 4,995 feet and No. 6 completed at 4,837 feet. The Huddleston Oil Co. also completed a well, No. 3-A, and while it will be brought in from the upper sand at 3,950 feet, it will probably result in a 500-bbl. well. A. T. Jergins will also list a completion, his No. 7 being finished in the deep sand at 5,005 feet. This well will undoubtedly result in a good producer. It was expected that the Henderson Petroleum Co. would complete No. 1 Fackler drilled to 5,001 feet, but the company did not secure a satisfactory water shut-off and the well will be recemented.

Huntington Beach

There were no new developments at Huntington Beach during the past week, there being only two new wells brought in, indicative of a general settled condition. The Invaders Oil Co. and the Union Oil Co. were the only operators to put wells on production, the former's No. 1-A Miller doing 575 bbls. a day upon completion, while the latter's No. 6 Brooks was good for 450 bbls. Number 1-A Miller was completed at 4,521 feet and is flowing through a ¾-inch bean under a pressure of 400 pounds. The oil tests 21.4 degrees and shows a cut of 1 per cent. The Union Oil Co.'s No. 6 Brooks was a deeper well than the Invader's No. 1-A Miller, it being completed at 4,825 feet. The oil from this well, flowing under a pressure of 600 pounds, tests 24.3 degrees and shows a cut of 2 per cent. During the coming week George F. Getty and the Petroleum Midway Co. should show completions, the former's well No. 3 having been finished at 3,800 feet, while the Petroleum Midway Co.'s No. 1 Vollmer-Meyers is being prepared for a production test at 4,000 feet.

Water trouble continues to bother operators in the northern part of the field and, except in a few instances where bottom water has been the source of trouble, there has been no improvement. The salt water encroachment, of course, is edgewater and cannot be remedied, but in various other parts of the field poor cementing jobs have resulted in the flooding of adjacent wells. Several producers which showed bottom water have been plugged back, with the result that they have been returned to production in a fairly satisfactory condition. The Union Oil Co. seems to be having the best success in overcoming water difficulties, although several other operators report favorable developments. With the return of higher prices for crude, it is probable that many operators in the central portion of the field will be content to produce from the upper zones, around the 2,500 and 3,000-foot level. These upper sands have, in many cases, been passed up for the deeper sands, but the former will undoubtedly be drilled when conditions return to normal and small producing wells are again the rule rather than the exception.

Miscellaneous Drilling

In the Torrance-Lomita district, the Midway Northern Oil Co. brought in its well No. 2 during the early part of the week and it started off doing 1,200 bbls. a day of 26.3 gravity oil from 3,580 feet. This is the Midway Northern's second producer within the last few months and gives the company a daily production of 2,550 bbl. a day. The Chanslor-Canfield Midway Oil Co., the largest individual operator in the field, completed No. 9 Torrance and, as a result, increased its production 220 bbls. a day. This well was completed at 3,098 feet and is producing 22.6 gravity oil with a cut of 1 per cent. George F. Getty brought in his well No. 1 at 3,300 feet and it will undoubtedly be recorded as a completion within the next few days.

The Union Oil Co.'s discovery well at Compton, No. 1 Collender, increased its production during the week and at the present time is producing slightly under 500 bbls. a day of 32.3 gravity oil through a 1-inch bean under a pressure of 500 pounds. The Union's No. 3 Callender is drilling ahead at 2,122 feet, while No. 1 Gardena is making hole at 2,725 feet and No. 1 Rosecrans at 2,812 feet. The Union is erecting two additional rigs, No. 1 Hellman and No. 1 Carson, both wells of which should be well under way within the next two or three weeks. Julian's Pico-Murphy well is still held up with a bad 15½-inch casing at 390 feet and it begins to look as though Julian will lose 4,065 feet of hole. The General Petroleum Co. is making hole in No. 1 Gardena at 1,953 feet and has staked out a location for well No. 13. The Fresno Petroleum Co.

is drilling out the cement in its No. 1 and operators are watching the outcome of this well because if production is secured it will open up a good deal of what now appears to be unfavorable territory.

The Dolke-Thomas Oil Syndicate's Coyote Hills wildcat, No. 1-B, has reached a depth of 3,715 feet and should begin to show up within the next two or three hundred feet if geological deductions are correct. It is reported that the Interstate Oil Co. will resume operations at Newport in the near future and, although there have been several wells put down in this vicinity, the company is apparently not satisfied with the results attained. This district does not look particularly inviting.

Field Operations

Oil field operations reported to the State Oil and Gas Supervisor show 26 new wells started, compared with 24 during the previous week, a total for the current year to date of 1,131, compared with 1,096 at the same time last year. Permits were issued for the following new wells:

Torrance

Location	Well
14- 4-14 Bush-Voorhis Oil Co.	1
C. C. M. O. Co.—	
14- 4-14 Torrance	24
16- 4-14 Torrance	25
33- 4-14 Kettler	1
Cullen E. Nye—	
14- 4-14 Higgs	1
23- 4-14 Cunningham & Kyle	1
Julian Petroleum Corp.—	
15- 4-14 Mueller	3
Leonard Wells, Inc.—	
23- 4-14 Leonard	11
14- 4-14 McDonnell Corp	2
14- 4-14 H. H. Patton	1
14- 4-14 H. H. Patton	2
Sprague Oil Co.—	
23- 4-14 Hugh	1

Long Beach

24- 4-13 Meserve-Knight-Fyfe, trustees	1
Petroleum Midway Co., Ltd.—	
13- 4-12 Foster One	3
24- 4-13 V. E. Sack & Co.	1
29- 4-12 Wigle & McBridge, Inc.	1A

Huntington Beach

Petroleum Midway Co., Ltd.—	
18- 5-11 Playan	2

Santa Fe Springs

Standard Oil Co.—	
26- 3-12 A. D. Houghton	1
1- 3-12 Orr	1

N. LOUISIANA-ARKANSAS

(Continued from Page 46)

Jones, Section 30-15-19, at 2,105 feet and has derrick up for No. 1 W. Jones, Section 31-15-19.

Columbia County Area

Three completions resulted from operations in Columbia County during the week one of which was an abandonment without a test in No. 1 Brown, Section 28-18-20, at 1,145 feet. Haskell and others completed No. 5 Wepfer, Section 24-15-20, pumping 40 bbls. from 2,165 feet, and the Magnolia Co. put No. 3 Wepfer, Section 26-15-20, on the beam, pumping 10 bbls. from 2,100 feet.

No new operations are recorded in this area. The Atlantic Oil Production Co. is drilling in lime at 1,505 feet after testing salt water at 1,480 feet in No. 3 Milner, Section 24-15-20. E. T. Brown and associates aare drilling in shale and lime at 2,810 feet in No. 1 Robinson, Section 23-18-23, 13 miles others are still shut down at 2,165 feet (corrected depth) in No. 1 Ray & Fullenweider, Section 12-17-22.

Haskell and others set 6-inch at 2,065 feet in No. 7 Wepfer and at 2,050 feet in No. 8 Wepfer, both in Section 24-15-20. Hude & Aarens are testing 8 feet of broken sand with a 2-foot cap rock at 2,075 feet in No. 4 Adkins, Section 13-15-20. The Magnolia Petroleum Co. set surface 10-inch and has drilled to 500 feet in No. 2 Hammond, Section 25-15-20. The Shaffer Oil & Refining Co. is waiting on standard rig for No. E-4 Milner, Section 24-15-20, at 2,005 feet, with 9 feet of sand. Turley & Tate are drilling at 1,850 feet in No. 3 Milner, Section 24-15-20.

Nevada County Area

One small producer and one failure are recorded in this area during the week. The Dixie Oil Co. is pumping 400 bbls. of water with 5 bbls. of oil from No. 1 Womack, Section 10-14-21, completed at 1,200 feet, and the Millie Dee Trustees abandoned No. 1 Stone, Section 36-13-20, at 2,560 feet, after testing dry.

No new operations are shown in this area and there is little change from last week's report. Ames and others are waiting on standard rig for No. 4 Waters, Section 10-14-21, at 1,175 feet with 8 feet of sand and a 2-foot cap. The Prescott Oil Co. is drilling in shale at 1,260 feet in No. 1 Henry, Section 10-12-20. Smitherman & McDonald tested dry at 1,155 feet in No. 2 Waters, Section 10-14-21, and are drilling at 1,180 feet. The Transcontinental Oil Co. has surface casing stuck at 70 feet in No. 1 Blakely, Section 14-13-20.

Bossier Parish: Three producers and one failure were reported in the Bellevue Field. Bliss & Weatherbee completed No. A-4 B. & W. and are blowing 15 bbls. from 405 feet with air, in Section 15-19-11. Corbett and others tested salt water and abandoned No. 2 Atkinson, Section 4-18-12, at 1,115 feet.

The Humble Oil & Refining Co. completed No. 22 Roy B. & W., Section 15-19-11, flowing 300 bbls. from 405 feet. The Standard Oil Co. completed No. 6 B. & W., Section 10-19-11, flowing 5 bbls. from 375 feet.

Bliss & Weatherbee have started drilling No. A-9 B. & W., Section 15-19-11. The Standard Oil Co. is drilling in rock at 260 feet in No. 2 McKinney, Section 14-19-11. Webb and others are drilling in shale and sand at 335 feet in No. 1 Catlet, Section 27-19-11, with a show of oil. Wellborn & Deputy are drilling at 420 feet in No. 1 McVay, Section 9-19-11.

Caddo Parish: One failure is recorded in Caddo Parish during the week, the Mutual Oil Co. having encountred salt water abandoned No. 3 Moore, Section 25-21-15, at 2,823 feet.

The Dixie Oil Co. is drilling at 2,800 feet in No. 53 Robertshaw, Section 12-21-15. In Section 13-21-15, it is waiting on standard rig for No. 55 Robertshaw, at 1,700 feet. In the same section, it set 10-inch at 175 feet in No. 56 Robertshaw.

The Fortuna Oil Co. is swabbing and bailing at 1,630 feet in No. 19 Robertshaw, Section 23-21-15. The Humble Oil & Refining Co. is drilling in chalk at 1,565 feet in 1 Youree-Randolph, Section 24-20-15. The Vitek Oil & Refining Co. is testing at 2,250 feet in No. 1 Alexander, Section 9-20-15.

Claiborne Parish: No completions are recorded in Claiborne Parish during the week. The Eldorado Chief Oil Co. is drilling in shale at 3,560 feet in No. 1 McKenzie, Section 35-22-7, 4 miles north of Homer. The Louisiana Oil Refining Corp. set 6⅝-inch at 2,795 feet in No. 3 J. L. Garrett, Section 24-23-8, 2 miles north of Haynesville.

The Standard Oil Co. tested 30,000,000 feet of gas at 2,010 feet in No. 2 Shaw Palmer, Section 30-21-7, and is drilling deeper. The Triangle Drilling Co. is drilling at 2,100 feet in No. 1 Reinach, Section 17-22-5.

De Soto Parish: Tarver and associates completed No. 1 Gilbert, Section 32-12-11, De Soto Parish, pumping 40 bbls. from 2,740 feet.

Phillips & Garrett tested dry at 2,940 feet in No. 1 Roscoe, Section 35-13-14, about 3 miles southeast of Grand Cane, and are arranging to retest at 2,960 feet. Snell & Kennebrew are drilling in lime at 2,805 feet in No. 1 Tompkins, Section 30-14-13, 3 miles southwest of Kingston. The T. & P. Coal & Oil Co. set 6-inch at 2,000 feet in No. 1 Roscoe, Section 22-12-13, 8 miles southeast of Mansfield.

Red River Parish: There was no completion in Red River Parish during the week. The Fortuna Oil Co. set 6-inch at 2,695 feet in No. 58 Pugh, Section 7-12-10.

Louisiana Wildcats

Bienville Parish: One failure was completed during the week in Bienville Parish. The Ohio Oil Co. tested salt water and abandoned No. 1 Randall, Section 12-18-7, at 2,995 feet. The Standard Oil Co. is fishing for 4-inch collar and bit at 2,035 feet in No. 1 Leena Scott, Section 21-17-18.

Bossier Parish: No completion is re-

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corded in Bossier Parish for the week. Sales & Walker were successful in their fishing job at 720 feet in No. 3 Bolinger, Section 30-23-12, and are drilling at 945 feet. The Tarver Bros. Petroleum Co. is milling out junk at 2,855 feet in No. 1 Bolinger, Section 15-22-14.

Lincoln Parish: The Four Creek Oil Co. is trying to kill fresh water flow at 380 feet in No. 1 Colvin, Section 27-20-3w.

Morehouse Parish: One failure is recorded in Morehouse Parish. Haynes and associates tested salt water and abandoned No. 1 Dixie Lumber Co., Section 54-17-3e, and abandoned the hole at 2,740 feet.

The Consolidated Oil Co. is milling out junk at 2,165 feet in No. 1 Oden, Section 28-20-5e. Feazel and others are drilling at 1,860 feet in No. 2 Plemmons, Section 22-20-5e. Ladell and others set 6-inch at 2,195 feet in No. 13 fee, Section 3-19-5e, and at 2,210 feet in No. 14 fee, Section 27-20-5e. In Section 22-20-5e, they have derrick up for No. 16 fee.

The Morris Trustees set 6-inch at 2,205 feet in No. 1 Snyder, Section 34-20-5e. In Section 28-20-5e, they have derrick up for No. 1 White. The Southern Carbon Co. is drilling at 1,850 feet in No. 10 Spyker, Section 29-21-5e.

Ouachita Parish: One producer was completed in Ouachita Parish. The Tidal Oil Co.'s No. 1 Farmer, Section 4-18-5e, has an initial production of 15,000,000 feet of gas from 2,110 feet.

This area probably evidences the greatest relative activity of any in the North Louisiana-South Arkansas territory. Very few operations stand temporarily abandoned or inactive and new operations are regularly in evidence.

The Atlas Oil Co. is drilling at 2,740 feet in No. 2 West Virginia Timber Co., Section 3-18-5e. The Boone Trustees set 6-inch at 2,175 feet in No. 1 Lieber, Section 4-19-5e.

The Consolidated Carbon Co. is drilling at 2,025 feet in No. 1 Wilson, Section 8-19-5e. The Cosmos Carbon Co. is rigging up to drill No. 2 Hancock, Section 20-19-5e. Ladell and others have derrick up for No. 17 feet Section 29-20-5e.

The Magnolia Carbon Co. is rigging up to drill No. 1 fee, Section 18-20-5e. The Monroe Louisiana Carbon Co. is drilling at 1,820 feet in No. 1 fee, Section 28-19-5e.

The Ouachita Natural Gas Co. is drilling at 1,800 feet in No. 2 Lieber, Section 2-19-4e. Owens and others set 6-inch at 2,245 feet in No. 1 Hare, Section 28-19-5e. The Southern Carbon Co. is drilling at 725 feet in No. 24 fee, Section 27-19-5e; at 2,090 feet in No. 5 Fairbanks, and has derrick up for No. 6 Fairbanks in Section 43-20-5e.

The Texas Co. set 6-inch at 950 feet in No. 1 Wiuchit, Section 31-19-5e, and in Section 33-19-4e set surface 12½-inch at 125 feet in No. 3 O'Neal. The Standard Carbon Co. set 6-inch at 2,215 feet in No. 1 Puckett, Section 15-19-5e. The United Oil & Gas Producing Co. is drilling at 2,185 feet in No. 2 Balkun, Section 3-19-5e.

The West Virginia Oil & Gas Co. set surface 10-inch at 200 feet in No. 2 West Virginia, Section 4-18-5e. Zeigen and others are drilling plug in 6-inch at 2,165 feet in No. 3 Muench, Section 28-19-5e.

Sabine Parish: The Gladys Bell Oil Co. is shut down for fuel at 3,890 feet in No. 1 Raines, Section 33-9-11.

Union Parish: Union Parish exhibits unusual activity during the week. Davidson & Palmer are drilling at 1,265 feet in No. 1 Frost Johnson Lumber Co., Section 12-23-1e. The Empire Gas & Fuel Co. has started drilling No. 1 Hamilton, Section 30-19-1e. J. P. Evans and associates have made location for No. 1 Cole, Section 16-22-2e.

Love Brothers are washing to bottom at 2,245 feet, where they pulled liner after testing salt water with a showing of dead oil in No. 1 Security Trust. The Union Power Co. has derrick up for No. A-5 Union Saw Mill, Section 29-21-4e, and No. A-6 U. S. M., Section 32-21-4e, and has made locations for Nos. A-7 and A-8 U. S. M., Section 21-21-4e. Woodard & Clarke have derrick pattern on No. 1 Clarke, Section 17-23-2e.

Webster Parish: One big gasser was completed in the Webster Parish area. The Fortune Oil Co. brought in No. 1 J. S. Merritt, Section 14-21-10, with an initial production of 45,000,000 feet of gas from 2,515 feet.

The Oil Field Gas Co. is drilling in lime at 2,360 feet in No. 1 Pardee, Section 27-23-10. In Section 14-21-10, it is drilling at 2,000 feet in No. 1 S. J. Merritt. The Ohio Oil Co. has derrick pattern on location for No. 1 Maynor, Section 34-23-10. The Texas Co. is fishing for drill stem at 3,210 feet in No. 1 J. H. Merritt, Section 5-22-10.

Arkansas Wildcats

Calhoun County: Harris & Bickle have succeeded in their fishing job at 500 feet in No. 1 Freeman Smith Lumber Co., Section 26-16-13, and are drilling at 925 feet in gumbo.

Drew County: Graves and others are drilling at 1,425 feet in No. 1 Karns, Section 10-13-6. The Monticello Ridge Oil Co. tested fresh water at 1,815 feet in No. 1 Wilson, Section 10-12-7, and is arranging to deepen.

Grant County: McKenzie & Emloy are drilling at 1,240 feet in No. 1 Prague, Section 26-5-12.

Hempstead County: The Columbus-Hope Oil Co. has started drilling No. 2 King, Section 24-11-25. Myers and others are drilling at 1,575 feet in No. 1 Nichols, Section 17-11-25. Orr and others are drilling at 1,500 feet in No. 1 Yates, Section 17-12-23.

La Fayette County: The Kensaw Petroleum Co. is waiting on liner to test 21 feet of sandy shale at 2,750 feet in No. 1 Red River Land Co., Section 34-19-24, just north of the Lloyd Harris well. Wilcox and others have No. 1 Renick, Section 25-17-24, waiting orders at 2,810 feet.

Powell Production Goes to 317,000 Bbls.; Tops Cushing's Mark

CORSICANA, Texas, Oct. 22.—The Powell Field on October 22 produced 317,000 bbls. from 385 wells, an average of 823 bbls. per well. A batch of enormous producers in the southwest end of the field, most of them on the Harris survey, created over 93,000 bbls. of new production and shot the daily output up to the highest figure ever attained by any field east of California, and exceeded by only field in that State, Santa Fe Springs. Cushing, in Oklahoma, was credited one day in April, 1915, with 316,000 bbls. but it did not repeat this performance and its average for that month was about 286,000 bbls. a day, which is still a mark for the Powell Field to shoot at.

Following are the late wells above referred to: Gulf Production Co.'s No. 1 Crews, 12,000 bbls.; No. 2 Crews, 10,000 bbls.; No. 5 Crews, 11,000 bbls. Tidal-Buttram Oil Co.'s No. 2 Crews, 14,000 bbls.; No. 4 Crews, 10,000 bbls. Gulf Production Co.'s No. 3 Barron, 3,200 bbls. G. Kent's No. 2 Kent, 5,000 bbls. Humble Oil & Refining Co.'s No. 1 Flemming, 8,000 bbls. The Texas Co.'s No. 4 Flemming, 300 bbls. Tidal-Buttram Oil Co.'s No. 9 Phillips, 6,300 bbls.; No. 10 Phillips, 8,700 bbls.; No. 11 Phillips, 5,000 bbls.

Additional completions in the field include the following wells: Humphreys Oil Co.'s No. 1-A R. I. Kent, abandoned at 2,108 feet; Kirby Petroleum Co.'s No. 2 W. A. Brown, sand at 2,956-80 feet, 165 bbls.; No. 6 Brown, sand at 2,975-88 feet, 210 bbls.; McMan Oil Co.'s No. 5 Chapman, sand at 2,805-61 feet; 3,500 bbls.; McMahan and others' No. 1 Christian, dry and abandoned at 2,865 feet; New Domain Oil Co.'s No. 4 Kent, sand at 2,950-85 feet, 175 bbls.; Skelly Oil Co.'s No. 3 Ramsey, sand at 2,939-65 feet, 400 bbls.; The Texas Co.'s No. 9 Flemming, sand at 2,905-55 feet, 2,905 bbls. in 9 hours; Tidal Oil Co.'s No. 7-B Ramsey, sand at 2,967-87 feet, 210 bbls.; Witherspoon Oil Co.'s No. 7 Burke, sand at 2,789-2,876 feet, 540 bbls.; Bass & Galloway's No. 3 Gentry, sand at 2,900-35 feet, 150 bbls.; Gulf Production Co.'s No. 5 Smith, sand at 2,932-36 feet, 125 bbls., with a showing of water; Humble Oil & Refining Co.'s No. 5 W. A. Brown, sand at 2,977-90 feet, 26 bbls. in 30 minutes, then quit flowing and will be put to pumping; same company's No. 6-B McKie, sand at 2,890-2,935 feet, 450 bbls.; No. 5-A S. D. Ramsey, sand at 2 950 69 feet, 195 bbls. on the pump; No. 6-A Ramsey, sand at 2,968-77 feet, pumping 240 bbls.

SHORTAGE AND CUT UPSET COASTAL AREA

HOUSTON, Tex., Oct. 22.—Between a shortage of some grade of Zero Cold Test lubricants and the possibility of a lower price for Gulf Coast crude oil, the refining industry of the Coastal area is somewhat upset. The shortage is on oils of 100, 200 and 300 viscosities. The threat of lower prices on crude oil is the result of the cut announced early this week by the Gulf Pipe Line Co., but so far not met by the other major purchasing agencies.

The common opinion among Coastal refiners is that the 75 cents a barrel price posted by the Gulf's buying subsidiary will not become the price level for the area. Still the fact that one concern has seen fit to post the lower price holds possibilities of a general cut and the independent refining branch is waiting, being perhaps neutral in its position. Refiners do not seem to favor a lower price. Their opinions are that the price, $1, is low enough to allow for profitable operation of plants.

No doubt this position is due to the strength of the finished oils of the lighter viscosities. The present demand is in excess of supply. Most every sales manager in the Houston area would buy 200 pale oil at the present high quotation and hold it for future delivery. In fact, most every sales manager is now in the market for 200 pale oil, seeking it from other sales managers. Last week there was some of this type of trading being done. But there is no evidence of it now. Surplus oil of this class either has been absorbed or its holders are declining to take from their own stocks when indications point toward movement to their own customers.

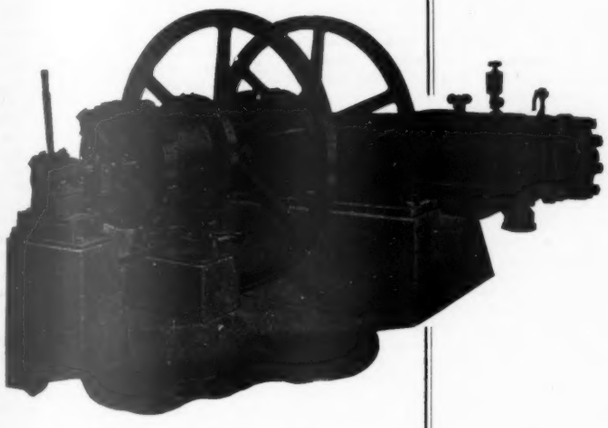
Zero Cold Test Oils are having their best winter season. Movement is up to the capacity of the plants of the area. The oils are moving as profitable margins. The movement is over a wide area, with the Southeastern and Middle Western States drawing the bulk of shipments.

Contrary to expectations, fuel oil has failed to pick up. The first touch of cool weather visited the Southwest this week This may stimulate fuel oil sales. So far, the price stands at its former figure of $1.10 to $1.15 a barrel. Large purchases are possible at the lower price, while small amounts are being moved at the higher mark.

Some cargo shipments of gas oil are due to clear the Houston port this month. Shipments by water, most of them coastwise to Atlantic ports, are due to diminish the gas oil surplus along the coast during the next three months. This product has accumulated during the summer until it had become a burden on storage facilities with some concerns.

BIG GAS WELLS ON FIRE

ARDMORE, Okla., Oct. 24.—The jinx which has been hopping around the Magnolia Petroleum Co.'s Smith lease in Section 24-2s-3w, northwest portion of the Graham Field, again put in its appearance Monday, when the company's No. 2 well blew in with estimated production of 20,000,000 feet of gas and ignited almost immediately. It is still burning, shooting a flame 75 feet into the air, and forming a fan of fire 40 feet in diameter under the rotary table. Operators are fighting the fire with steam supplied by a battery of seven boilers.



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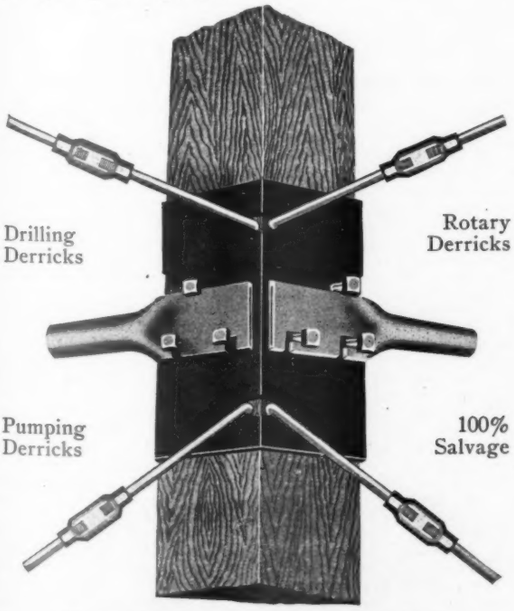

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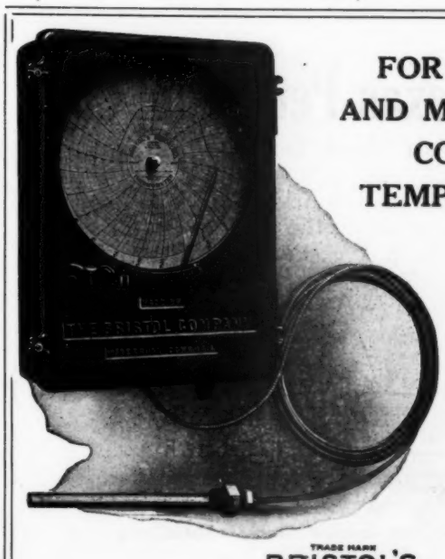

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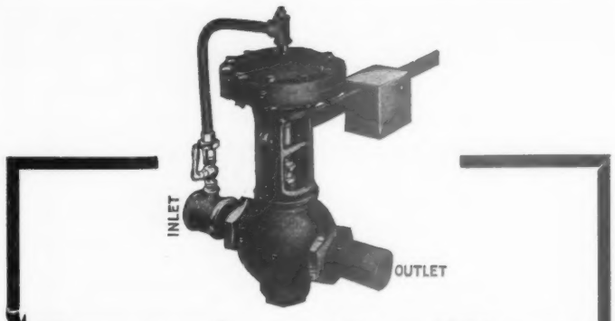

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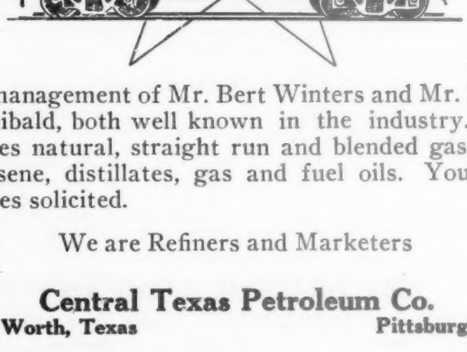

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OKLAHOMA FIELDS

(Continued from Page 36)

the Mutual Oil Co. and the Roxana Petroleum Corp. thought well of it as each has agreed to drill a 3,500-foot test for a consideration of 3,000 acres of leases in blocks. The Mutual Oil Co.'s No. 1, C NE SE, Section 1, drilling with rotary tools, is down over 400 feet and the Roxana Petroleum Corp.'s No. 1 C N half NE, Section 9, drilling with cable tools is below 900 feet. The rig of Kellogg and others is in the northeast corner of Section 10. Citizens of Leedy leased up the block of acreage which covers the whole structure and they are intensely interested in the outcome of the tests as they see visions of a booming oil town with all the excitement and profit that goes with it if the tests are successful.

The Leedy structure lies in the big bend of the Canadian River. It is about 45 miles north of Sayre, Beckham County and due east of the Amarillo gas field in the Texas Panhandle.

The topography of the Leedy area is characteristic of the Red Bed formations. It is rolling and rather badly broken in many places. Deep gulches along the smaller drainage expose strata of shales, sandstones and gyp. A topographical high that slopes gradually in every direction conforms closely to the structural high or elongated dome. The strata exposed are of the quartermaster division and Permian age and consists of red shales, sands and clays. The Greer formation, according to the geological report on the area, underlies the Quartermaster and is made up largely of gypsum and dolomite beds on top and bottom. The formation is about 275 feet thick. The Woodward, Blaine and Enid formations of the Permian age underlie the Greer and are approximately 200 feet, the report says. It is estimated that the red beds will not exceed over 2,500 feet in thickness in the Leedy area.

Several years ago a well was drilled in Section 27-17-21w which passed through the red beds at 2,153 feet and drilling was stopped through lack of finances. It was reported that there were some oil and gas showing in this test. The Leedy structure is said to be similar to the Sayre structure in Beckham County where there are four producing wells and which is being subjected to a very considerable widely scattered development.

Another western test of interest is that of Morton and others on the Elders farm, NE cor. Section 22-16n-18w, Dewey County, about 97 miles southeast of Leedy.

Developments in Beckham

Beckham County has a daily production of about 900 bbls. Of this the Carter Oil Co. is getting 430 bbls. a day from its one well in Section 31-9n-23w; the Empire Gas & Fuel Co. 10 bbls. from one well and the Atlantic Oil Producing Co. 200 bbls. from one well, also in Section 31. The Carter Oil Co.'s well in Section 15-9n-23w is not producing, although it had lately been making 150 bbls. a day. There are 7 rigs and 25 wells drilling in the county at this time. The Western Natural Gas Co.'s No. 1 D'Armond, NE cor. SW, Section 23-7n-23w, was drilling below 1,800 feet. Burton & Higgins' No. 1 Kelly, C NE NE,, Section 10-8n-21w, drilling below 1,100 feet; Turman Oil Co.'s No. 1 Ross, SW cor. NE, Section 4-8n-22w, was fishing for bit at 2,745 feet. Kavane and others had a showing of oil at 1,007-23 feet, in No. 1 Vandeveeter, NE cor. Section 25-8n-22w, Merriam & Findeiss' No. 1 Sands, SW cor. NE, Section 4-8n-24w, was fishing for pipe at 2,840 feet; Christian and others' No. 1 Sidwell, C NW SE, Section 18-9n-22w, shut down at 100 feet; Simpson and others' No. 1 Dalton, SW cor. NW NE, Section 32-9n-22w, shut down at 525 feet; Sayre Oil & Gas Co.'s No. 1 Goldsmith, CNL SW SE NE, Section 15-9n-23w, drilling below 2,110 feet; Stone & Hivick's No. 1 Goldsmith, SW cor. NE, Section 15-9n-23w, rigging up standard tools at 2,160 feet; Emerald Oil Co.'s No. 1 Bohuski, NE cor. SW, Section 15-9n-23w, drilling at 1,100 feet; Magnolia Petroleum Co.'s No. 1 Montgomery, SE cor. NW, Section 15-9n-23w, set 8-inch casing at 2,201 feet; Magnolia Petroleum Co.'s No. 1 School Land, C SE NW, Section 16-9n-23w, drilling below 3,495 feet; Williams and others' No. 1 Roberts, SW cor. NE, Section 21-9n-23w, shut down at 500 feet; Coogan & Wallace's No. 1 Enzy, C NW SW SW, Section 21-9n-23w, drilling below 500 feet; Sayre Oil & Gas Co.'s No. 1 Sheets, NW cor. Section 26-9n-23w, shut down at 100 feet; Gypsy Oil Co.'s No. 1 Windle, C NW SW NE, Section 31-9n-23w, tools in; Simpson and others' No. 1 Knight, NW cor. SE NW, Section 32-9n-23w, fishing for tools at 2,860 feet; Foster Oil Co.'s No. 1 Martin, C NE NE NW, Section 33-9n-23w, shut down at 3,230 feet; Beeckham Oil Co.'s No. 1 Jordan, C SE SW NW, Section 35-9n-23w, fishing for tools at 3,107 feet; Pringle and others' No. 1 Burkhalter, NE cor. NW, Section 6-9n-24w, shut down at 3,110 feet; Williams and others' No. 1 Roberts, SW cor. NE, Section 21-9n-24w, shut down at 100 feet; Magnolia Petroleum Co.'s No. 1 School Land, NE cor. 36-9n-24w, drilling at 2,430 feet; Grimes and others' No. 1 Gibson, C SE SE NW, Section 36-9n-25w, shut down at 2,027 feet; Ship & Nash's No. 1 Gotham, SE cor. NW, Section 14-9n-26w, shut down at 2,750 feet; Phillips Petroleum Co.'s No. 1 Gaines, NE cor. SW SW NE, Section 15-10-22w, shut down at 100 feet; Boillan and others' No. 1 Green, C SW SW, Section 34-10n-24w, shut down at 1,300 feet.

In Caddo County, Johnson and others have rigged up for a test on the Sheets farm, C NE NE SW, 26-6n-10w. It will be a rotary test.

Southern Wildcats

In Coal County McFerson and others' No. 1 Jameson, CNL NE SW, Section 24-1n-8e, were drilling below 100 feet; J. A. Bearman, in his No. 1, SW cor. N half NE, Section 34-2n-9e got a showing of gas at 1,625-35 feet and an 8,000,000-foot gas production at 1,665-70 feet.

In Garvin County the Gypsy Oil Co. was drilling below 340 feet in No. 1 Mays, C NE NE SW, Section 30-4n-2w. Bedner and others were recementing pipe at 1,610 feet in No. 1 Richardson, C NE NW, Section 18-1n-1e. Gum Bros. and others' No. 1 Gray, SE cor. NW, Section 5-3n-3e, was drilling below 2,284 feet.

In Grady County, Ray and others' No. 2 Harrison, SW cor. NE NE, Section 28-3n-5w, was good for 15,000,000 feet of gas fronm sand at 1,391-1,410 feet, and Badgett and others' No. 1 Harnes, C SE SE SW, Section 15-5n-7w, was a 3,000,000-foot gas well at 1,938-88 feet. The Ethel Oil Co.'s No. 1 McKee, C SW SE SE, Section 20-4n-4w, was drilling below 1,000 feet; Haggerling and others' No. 1 Earl, CSL N half NE NE, Section 5-5n-8w, was drilling below 2,880 feet.

In Jefferson County the Humble Oil & Refining Co.'s No. 1 Jefferson, C SE SE, Section 16-6s-7w, was drilling below 1,000 feet. The National Oil Fields Co.'s No. 1 Ray, C SE NW NW, Section 10-7s-6w, was drilling below 1,550 feet. Landrem and others' No. 1 Standfield, SE cor. Section 33-7s-6w, was fishing at 1,150 feet.

In Marshall County, Joe Cook has a test drilling below 2,480 feet, No. 1 Westheimer, C SE SE NW, Section 4-5s-5e. The Humble Oil & Refining Co.'s No. 1 Scott, SE cor. NE SW, Section 22-6s-4e, was drilling below 2,050 feet.

In the Acme district, Grady County, the Humble Oil & Refining Co.'s No. 1 Pendley "B," C NE SW, Section 14-4n-8w, was drilling below 1,240 feet and the company had a cleaning out job at 2,400 feet in No. 2 on the same farm, C SW NW Section 4.

Badgett and others' No. 1 Harness, C SE SE SW, Section 15-5n-7w, Grady County, was a 3,000,000-foot gas well at 1,938-88 feet. The Magnolia Petroleum Co. completed a 5,000,000-foot gasser at 3,168-70 feet in No. 1 Stephens, NW cor. SE NW, Section 14-5n-8w. The Atlantic Oil Producing Co.'s No. 1 Hill, C SW SW, Section 25-5n-8w, is good for 6,500,000 feet of gas at 1,450-59 feet.

In Love County Reed & Davenport's

No. 1 Gray, NE cor. Section 9-7s-1w, was cleaning out at 3,002 feet.

In Pontotoc County the American Oil & Refining Co.'s No. 1 Stark was drilling below 1,029 feet.

Gilbert & Clark were drilling below 2,000 feet in No. 1 Collins, C SE SE NW, Section 28-3n-4e, Garvin County.

In Pottawatomie County the Day Oil & Gas Co. had a test drilling below 1,040 feet, No. 1 Ball, SW cor. NE NW NE, Section 9-5n-3e and Davis & McGinley were drilling below 2,670 feet in No. 1 McGehey, SE cor. NW, Section 10-6n-2e.

In Love County the Union Tool & Supply Co.'s No. 1 Draughn, CEL W half SW, Section 27-6s-2e, was fishing for tools at 3,800 feet.

Outside Drilling in Payne

In Payne County there is considerable wildcatting, some of it active, including the Willis Oil & Gas Co.'s No. 1, SE cor. SW, Section 12-17-4, drilling below 1,300 feet; R. C. Jones' No. 1, C SE SE, Section 31-18-4, fishing for tools at 1,870 feet; Gypsy Oil Co.'s No. 1, NW cor. SE, Section 4-19-5, with casing trouble at 3,360 feet; Twin State Oil Co.'s No. 1, SE cor. SW, Section 15-19-6, drilling at 3,640 feet.

In Hughes County the Kingwood Oil Co.'s No. 1 Barnett, NW cor. NE SW, Section 7-7-10, was drilling below 3,790 feet. The Independent Oil & Gas Co.'s No. 1 Alexander, NE cor. NW, Section 23-8-10, was drilling below 2,670 feet.

In Okfuskee County Howarth and others were drilling No. 1 Field, SE cor. SW NW, Section 1-11-8, below 1,470 feet. The same company was drilling No. 1 Beaver, SW cor. NE SE, Section 26-12-8, at 2,910 feet, and No. 1 Yahola, SW cor. NW, Section 20-12-9 below 2,630 feet. C. W. Wangerine was below 1,650 feet in No. 1 Callahan, NW cor. Section 25-12-9.

Wilcox & Oswalt have a rig up for No. 1 Kinyer, SW cor. Section 3-13-8. The Iron Mountain Oil Co. has commenced drilling No. 1 Saryokiche, SE cor. SW SW, Section 4-13-8. The Link Oil Co.'s No. 1 Saryokiche, SE cor. SW, Section 4-13-8, has been spudded in. The Skelly Oil Co.'s No. 1 Colbert, SW cor. SE, Section 4-13-8, was drilling below 1,225 feet. The Gypsy Oil Co.'s No. 1 Riley, NE cor. NW, Section 9-13-8, was below 2,800 feet. Lippa & LaBosquet were drilling below 2,875 feet in No. 1 Chessoe, CWL SW SW, Section 2-13-9.

In Seminole County, the Independent Oil & Gas Co. underreamed to 2,200 feet in No. 1 Ahaise, NE cor. SW, Section 15-9-8. Waite Phillips Co., and the Wilcox Oil & Gas Co.'s No. 1 Davis, SE cor. NE NE, Section 28-9-8, had a fishing job at 1,250 feet. J. E. Dow was drilling below 1,775 feet in No. 1 Johnson, NW cor. SW SE, Setcion 33-10-9.

The Producers & Refiners Corp. has commenced drilling No. 1 Narcome, NE cor. SW NW, Section 14-7-8. W. R. Ramsey's No. 1 Townsite, NW cor. SW SW NE, Section 19-8-8, was drilling at 1,000 feet. The Magnolia Petroleum Co.'s No. 1 Bowlegs, SW cor. SE SW, Section 21-8-8, was rigged up. Freeman & Crosby's No. 1 Foster, C NW NE SW, Section 28-8-8, was underreaming to 1,420 feet. The Oklahoma Co.'s No. 1 Foster, SW cor. Section 28-8-8, was drilling below 800 feet. In Section 32, the Dixie Oil Co. is drilling five wells in the northeast quarter, Nos. 2, 3, and 4 Foster, No. 1 Long and No. 1 Harris, while in the northwest quarter of Section 33, same company is drilling Nos. 2, 4, 5, and 6 Foster. This is property bought from R. H. Smith and associates. The Dixie Oil Co. has commenced drilling No. 1 Yarnak, NE cor. SE SW SE, Section 25-8-7.

LOOKING AHEAD

Many men and women are going to enjoy a happy Thanksgiving because they made good use of The Oil and Gas Journal Classified Section.

Read the advertisements in the Classified Section. You will find there ideas that can be used by you to good advantage.

Dixie Oil Co. Pays $3,000,000 Cash for Seminole Acreage

Another investment by a Standard subsidiary has brought Oklahoma into the production limelight again. The recent announcement of the sale of a part of the acreage of The Oklahoma Co., including its production in the new Wewoka Field, Seminole County, served to show Oklahoma producers that the larger operating companies consider that area valuable. The Dixie Oil Co. was the purchaser.

The deal, which was consummated late Friday, October 19, included the transfer of approximately 8,000 bbls. of production from three Smith sand wells and production of 200 bbls. from the 1,850-foot sand in Sections 32 and 33-8-8. The sale included 10 drilling wells, a casinghead gasoline plant, two 55,000-bbl. tanks, pipe lines to a loading rack near Wewoka, a pump station and smaller tanks and lease equipment. With the exception of about 200 acres, all of the 1,080 acres of leases included in the deal are in Township 8-8. Three small leases lie across the line in Township 7-8. The acreage forms about one-fifth of the lease holdings of the Oklahoma Co. in Seminole County.

Had Faith in District.

Development of production in Section 33-8-8 by R. H. Smith of Philadelphia and associates on March 17, 1923, formed one of the most important oil strikes in the State. Completed for a production of 480 bbls. daily, the discovery well, No. 1 Foster, NW cor. SW NW, Section 33-8-8, served to draw the attention of Mid-Continent operators to a section which had been given scant consideration.

Since the completion of the first Penn-West well in 1915 by Mr. Smith, he had believed in the existence of a large pool of oil in the Wewoka territory and he and his associates spent a large amount of money and consumed many years in proving their beliefs. The discovery well of the Wewoka Field resulted in additional drilling with the result that 10 producers are drawing on the Smith sand, and another recent discovery, the Lewis & Clark well, is producing from a formation thought to be above the Smith sand, and heavy oil is coming from another well in the 1,850-foot sand.

With a daily output from 10 wells touching the 19,000-bbl. mark on one day, and with only 10 or 12 feet of pay formation drilled in the Smith sand, operators believe that the Wewoka territory holds a larage reservoir and a large amount of production will come from Township 8-8.

Mr. Smith, as president of the Oklahoma Co., which took over his property, will take the lead in developing production in Township 7-7, where he believes more large production will be found, and where the major portion of the Oklahoma Co.'s leases are situated.

The deal is said to have involved a cash payment of $3,000,000.

SELLING FAST

The Petroleum Exposition number of The Oil and Gas Journal issued October 4 is in big demand. Oil men in all parts of America are requesting additional copies. Send in your order now before the issue is completely sold. Send 25 cents with your name and address and a copy will be mailed to you.

BUFFVILLE, KANS., GASSERS

NEODESHA, Kans., Oct. 22.—The Kansas Fuel Gas Co. has completed several good gas producers on its properties in the gas field northwest of Buffville, and north of Neodesha, is drilling three more wells now and has connected its properties with 6-inch welded pipe lines with industrial consumers at Buffville.

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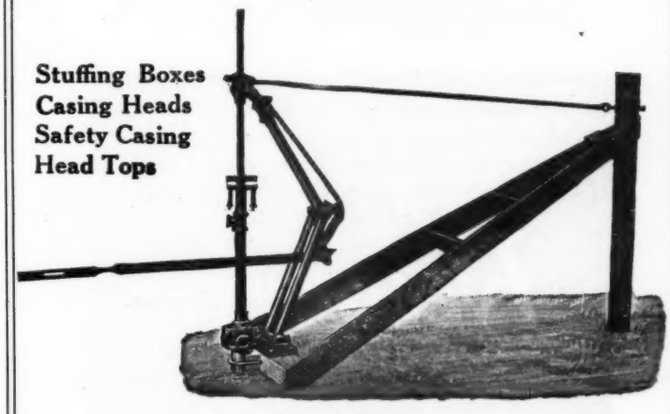

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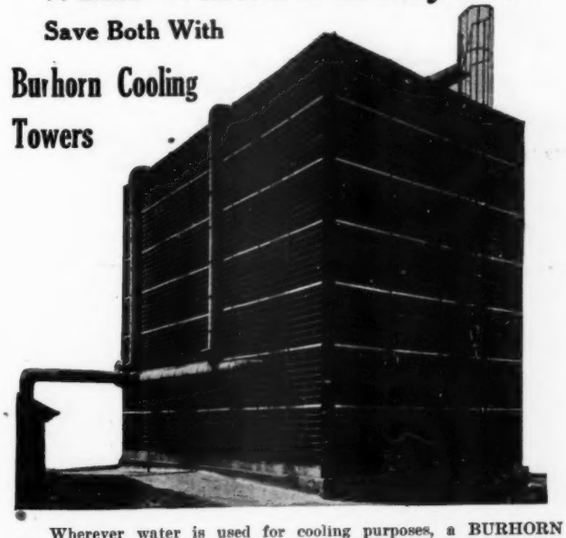

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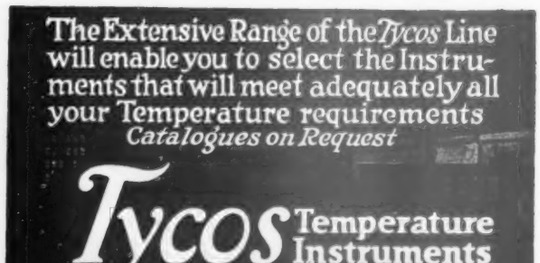
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OKLAHOMA-KANSAS GROSS PRODUCTION

September Record Shows Daily Average Decrease in Oklahoma of 26,122 Bbls. From August Figures; Only 249 Bbls. More Than September Last Year. Kansas 249 Bbls. a Day Less Than in August

By James McIntyre

Gross production in Oklahoma for the month of September was 12,812,220 bbls., an average of 427,074 bbls. per day. This represented a decline from the August record of 1,236,856 bbls., and a daily average decrease of 26,122 bbls. Compared with September a year ago it represented an increase of 7,090 bbls., or a daily average difference of 249 bbls. in favor of September this year. This going backward to almost the level of a year before is the result largely of inactivity in the field. There is no reason for Oklahoma floundering in the doldrums other than that there is not sufficient incentive to carry on a normal drilling campaign because of the over production of crude.

The Burbank Pool in Osage and Kay Counties fell from 107,114 bbls. in August to 96,750 bbls. in September. Tonkawa slumped from 77,469 bbls. in August to 57,620 bbls. in September. There was no great difference in any of the other fields outside of an increase in the Wewoka Field in Seminole County, which was responsible for the district classified as Okfuskee, Hughes and Seminole increasing from 18,715 bbls. in August to 22,489 bbls. in September. A new field, Sayre, Beckham County, is carried in the September report, starting off with a daily average production of 770 bbls. from five wells.

The Kansas fields produced in September 2,234,130 bbls., a daily average of 74,471 bbls., which was 249 bbls. a day less than in August. Greenwood County showed a good gain, the August daily average having been 17,459 bbls. and that of September 18,224 bbls. Marion County improved a little, but Butler County shows a continued slight falling off. Like Oklahoma operators, many Kansas oil men are waiting for better conditions before going in search of new production.

Following are the September production figures for both States:

OKLAHOMA		
County—		
Washington	7,098	7,098
Nowata-Rogers	6,515	6,515
Osage-Kay—		
Burbank	96,750	
Osage, outside of Burbank	23,397	120,147
Tulsa—		
Bird Creek, Owasso, etc.	4,712	
Red Fork, Sand Springs, Turkey Mountain, etc.	2,010	
Bixby, Leonard and Jenks	2,252	
Broken Arrow	559	9,533
Okmulgee—		
Mounds, Beggs, Hamilton Switch and Youngstown	11,215	
Bald Hill	2,610	
Okmulgee and Morris	2,483	
Tiger Flats, Henryetta and Schulter	3,388	19,696
Muskogee and Wagoner	1,600	1,600
Okfuskee, Hughes and Seminole—		
Wewoka	12,250	
Deaner, Lyons, Okemah, Wetumka and miscellaneous	10,239	22,489
Creek—		
Cushing and Shamrock	24,090	
Glenn, Sapulpa and Kiefer	9,513	
Bristow, Kelleyville and Depew	48,988	
Eastern Bristow	5,460	88,051
Pawnee—		
Cleveland	3,101	
Keystone and Jennings	4,412	7,513
Payne—		
Yale, Quay and Ingalls	5,398	
March Pool (N. Cushing)	2,007	7,405
Kay and Noble—		
Blackwell	2,040	
Mervine	675	
Ponca City	899	
Tonkawa	57,620	
Billings	550	61,784
Garfield—		
Garber	5,949	5,949
Carter—		
Healdton	21,350	
Hewitt	17,550	
Milroy-Fox	2,665	
Brock	333	
Graham	4,520	46,378
Stephens-Cotton—		
Loco	2,550	
Kilgore	220	
Comanche	825	
Duncan	9,110	
Walters	1,216	23,861
Caddo—		
Cement	2,130	2,130
Garvin—		
Robberson	5,650	5,650
Beckham—		
Sayre	770	770
Pontotoc—		
Allen	445	445
Total Oklahoma		427,074
KANSAS		
County—		
Marion—		
Florence	3,247	
Peabody	3,716	
Covert-Sellers	1,160	8,123
Butler—		
Elbing	4,630	
Potwin	702	
Cameron-Robinson	750	
Wilson-Dunkle	3,116	
Towanda	3,944	
El Dorado	7,616	
Fox-Bush	5,640	
Nuttle-Koogler	1,580	
Sluss	543	
Blankenship	1,115	
North Augusta	1,111	
South Augusta	2,160	
Smock	306	
Douglas	195	
Leon-Weaver	3,540	34,548
Greenwood-Woodson—		
Virgil	4,342	
Seeley	6,210	
Thrall-Burkett	4,293	
Sallyards	1,450	
Polhamus	1,150	
Teeter	679	
Miscellaneous	100	18,224
Other Counties—		
Cowley	2,123	
Chautauqua	2,760	
Elk	612	
Wilson	290	
Montgomery	1,993	
Allen	1,701	
Neosho	1,010	
Lyon	40	
Miami	602	
Franklin	621	
Bourbon	123	
Linn	313	
Anderson	930	
Labette	56	13,175
Total Kansas		74,471
Total Okla. and Kansas		501,545
OKLAHOMA		
Total production in Sept., 1923		12,812,220
Total production in Aug., 1923		14,049,076
Decrease in September		1,236,856
Total production in Sept., 1922		12,599,370
Increase in Sept., 1923, over Sept., 1922		212,700
Average daily production in Aug., 1923		453,196
Decrease in average daily production in September		26,122
Average daily production in Sept., 1922		419,904
Increase in average daily production in Sept., 1923, over Sept., 1922		7,090
KANSAS		
Total production in Sept., 1923		2,234,130
Total production in August, 1923		2,316,330
Decrease in September		82,200
Total production in Sept., 1922		2,760,000
Decrease in Sept., 1923, from Sept., 1922		514,130
Average daily production in August, 1923		74,720
Decrease in September		249
Average daily production in Sept., 1922		91,422
Decrease in Sept., 1923, from Sept., 1922		17,173

HUMBLE CO. COMPLETES 2,000-BBL. HULL WELL

HOUSTON, Tex., Oct. 23.—The only completion of the moment over the week end is the Humble Oil & Refining Co.'s No. 5 Taylor on the northwest side of the dome at Hull, flowing 2,000 bbls. per day at 2,075 feet.

The Noack Oil Co.s No. 1 Baldridge, in the shallow Milam County pool, is reported good for 20 bbls. at 943 feet.

In McMullen County, the Grubstake Investment Co.'s No. 1 Fisher, originally a 2,000,000-foot gas well, is now making about 15 bbls. of oil. The Leonard Petroleum Co. is deepening No. 1 Pandora in the eastern part of Wilson County from 1,200 feet. The Texas Co.'s No. 2 Theilman, southwest of Brenham, is drilling below 3,625 feet.

State and Federal Probe of Gasoline Asked by New York

NEW YORK, Oct. 20.—Acting Mayor Murray Hulbert has made formal demand for investigations by Congress and the New York State Attorney General into the price of gasoline in this State. The demand was contained in letters to United States Senator Royal S. Copeland and Governor Alfred E. Smith.

Mr. Hulbert argued that the low prices elsewhere in the United States and the large surplus of gasoline in California made it possible to ship to New York gasoline that could be sold at lower prices. He assailed in particular the Standard Oil Co. While these letters were being written, the Standard Oil Co. of New York and the Standard Oil Co. of New Jersey were announcing price reductions to meet previous cuts by the Gulf Oil Co. The reduction was said to be due to a surplus of the product.

In his letter to Governor Smith, the acting mayor wrote:

"The consumer in Greater New York is now paying and has for months been paying a higher price for gasoline than in any other part of New York State, and greater than the consumers of gasoline in adjoining States whose location denies them New York's opportunity of enjoying deep water facilities and large oil refining establishments.

"The present price for gasoline to the consumer at filling stations in New York City is 21 to 22 cents per gallon. In Buffalo it is 18 cents per gallon. In Albany it is 19 cents and in Rochester 17 to 19 cents per gallon. In Syracuse it is 16 to 18 cents per gallon.

"I have seen quotations on California gasoline which I am told is of a quality as good as now being sold at filling stations in New York City indicating a price of 9 cents per gallon delivered in buyer's tanks in New York Harbor.

"While the retail price in New York City is from 21 to 22 cents per gallon, during the summer it has been as high as 24 cents per gallon. The margin between the wholesale price and the price of gasoline to the consumer in New York City is sufficiently great to require explanation."

Mr. Hulbert sent telegrams to Mayors J. Hampton Moore of Philadelphia and James M. Curley of Boston, asking whether they would join him in a movement to obtain lower prices for gasoline. The message said:

"What is the situation with respect to the sale of gasoline in your city? Will you join with me in a movement to aid cities having superior waterfront terminal facilities to obtain the advantage in ordered by Governor Smith.

Mr. Teagle Favors Inquiry

An investigation of the prices charged for gasoline in New York City has been ordered by Governor Smith as the result of the letter sent to him.

An investigation into the oil industry such as suggested would show that gasoline prices are too low for the good of the industry or for the ultimate good of the public, according to Walter C. Teagle, president of the Standard Oil Co. of New Jersey. For these reasons, Mr. Teagle said, he was in favor of such an investigation.

Mr. Teagle said the petroleum industry has just passed through one Government investigation, the beneficial results of which he was unable to see, but that he welcomed "an honest investigation by in telligent men."

"There is evidently an impression here that other sections of the country have enjoyed much bigger reductions in gasoline prices than the East," he said. "This is not so. From the tank wagon price prevailing early in April this year, the high point there has been a decline of 6.8 cents in Chicago, 8.6 cents in Detroit, 6.5 cents in New Jersey, 7 cents in Washington, D. C., 7 cents in San Francisco, Philadelphia and Los Angeles, and 6 cents in Portland, Ore. Within this perod the tank wagon price in New York has fallen 8 cents, or from 24.5 cents in April to 16.5 cents today."

Mr. Teagle added that there was some confusios between quotations for socalled Navy specification gasoline, which is the grade being generally shipped from California, and for the considerably higher grade to which the market is accustomed. "However," he said, "product bought in California moved 4,200 miles by boat, and ultimately distributed in this section cannot be delivered to the trade much under the present tank wagon price of the more valuable grade being delivered here. Moreover, there is not enough surplus gasoline produced in California to supply any material part of Eastern requirements."

The reductions recently in gasoline prices in Eastern States, Mr. Teagle said, were a natural result of oversupply, with consequent pressure to sell, the lower quotations being an effort to find an outlet for this surplus. In such a situation, he added, the manufacturer did not always stand to recover his costs.

Taft, as Arbitrator, Holds Costa Rican Oil Grant Invalid

WASHINGTON, Oct. 22.—An award holding invalid the grant of an oil concession in Costa Rica to Amory & Sons of New York, by the Costa Rican Government during the regime of Dictator Tinoco was handed down by Chief Justice Taft, arbitrator between Costa Rica and Great Britain under a special treaty.

The concession had been transferred to Amory & Sons to British interests, and was said to have applied to about one-half of the entire territory of Costa Rica. The Royal Bank of Canada also had entered the proceedings as claimant for $200,000 paid in connection with the transaction to Tinoco and his brother, just before Tinoco fled from Costa Rica in 1919.

Upholding the position of the present Costa Rican Government, which outlawed the concession, Justice Taft held that the advance made by the Royal Bank was "for obviously personal and unlawful uses of the Tinoco brothers." The award assigned to the bank, however, a mortgage of $100,000 now held by the Costa Rican Government on the estate of one of the Tinoco brothers.

The Chief Justice also held that in decreeing the invalidity of the Amory concession Costa Rica had "worked no injury" to the British interests to whom the concession had been consigned.

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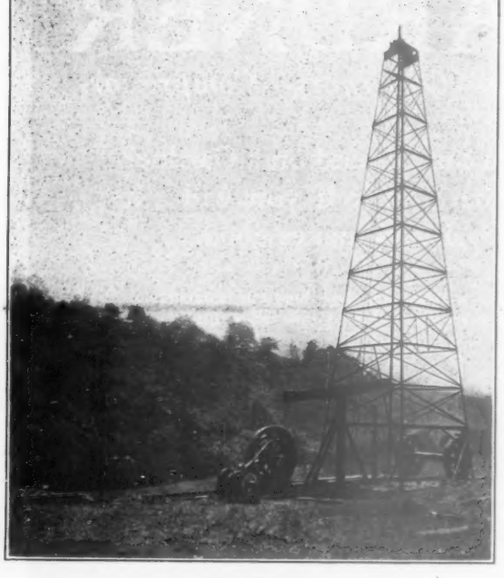

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FLOODING AIDS RECOVERY OF CRUDE OIL

(Continued from Page 101)

surface so many wells would not have to be drilled.

In the experiments on the solid sandstones I found water containing bubbles would extract more oil than water alone. The amount was about 10 per cent more in fine sandstones, like the oil sands of New York State, and about 30 per cent more in coarse oil sands. To apply this in the field it would be necessary to get a pump which would force the gas or air into the sand at a pressure equal to the pressure of the water column, generally about 500 pounds per square inch. The Ingersoll Rand Co. has a pump that will give about 35,000 cubic feet of free air at a pressure of 500 pounds per square inch. The cost of this pump is $772 but this would supply 10 or 20 ordinary flood wells with gas. There is another simaller pump used for charging torpedoes, but I have not been able to get a quotation on it yet. I believe the only possible way to tell definitely whether or not this method could be used in the field is actually to try it out.

Comparative Returns

Forrest Dorn, discussing the comparative return, said that some years ago it became apparent that the Bradford and Allegany fields could no longer be operated at a profit without the restoration of pressure. Experience, so far has proven water to be the best driving medium.

There are various methods of restoring pressure with water, now in practice. Efforts were first spent, not in endeavoring to determine the best means of extracting the oil but whether it was advisable to increase production and consequently hasten depletion of properties by restoring pressure.

This became a very serious question because water once introduced would become a great menace if it did not prove a success and, again, water once introduced and taking its natural course would give only the best results by keeping fields operations in pace with its advance.

"This would mean," Mr. Dorn said, "that we would see the time when we would be selling a large amount of oil on a low market. We were very much adverse to any system that did not allow us greater control of our production and which compelled us to produce oil in spite of the market. At every period of low markets the producer feels that the less oil he is compelled to sell the better he is off and you get the advice from everyone to store your oil in the ground until the markets improve."

In working out this problem Mr. Dorn took two imaginary 100-acre properties, identical as to sand, porosity, oil content and depth, property No. 1 to be operated in the ordinary way with one or two small floods, producing the average amount of oil. At the normal rate of depletion this property will last something over 100 years. Property No. 2 to be operated by some intense flooding method which will deplete in 30 years.

Two Examples Given

Mr. Dorn continued, "that the net profit on a barrel of oil over a period of 30 years or a period of 100 years is $2 per barrel, that the total recoverable contents per acre is 10,000 bbls., giving a total recovery from each property of one million barrels which at $2 per barrel net profit gives $2,000,000 net profit from each property. The per acre content and the net profit per barrel, be it understood, are not intended to be correct. I have used these figures because they are round numbers and more easily handled than the true ones which are a great deal less. But so long as each property is considered at the same profit per barrel and the same recoverable content per acre the ratio will be correct. Now we have two properties of identical conditions and value. The manner of operation, alone, is left to consider. Property No. 1 will pay its owner a total net sum of $2,000,000 b the end of 100 years. Property No. 2 will pay its owner a total net sum of $2,000,000 by the end of 30 years. The owner of property No. 2 puts his profit out at 6 per cent interest for the remaining 70 years. This interest amounts to $8,400,000 at the end of that time. He has earned then $2,000,000 from the sale of oil and $8,400,000 in interest, giving him a total of $10,400,000 at the end of 100 years as against the total earning of Property No. 1 of $2,000,000 or more than five for one. Interest has not compounded in either case but if it were it would give the owner of Property No. 2 a much greater advantage than the above example. In order for the owner of Property No. 1 to break with the owner of Property No. 2 it will be necessary for him to receive more than five times as much for his oil during the last 70 years than was received during the first 30 years. In other words if the market averages $4 per barrel for the next 30 years it must average $20 per barrel for the last 70 years. This proves conclusively that the best policy was to extract the oil in as short a time as possible. The producer's profits are made on the average price of oil, therefore any attempt to hold back production on a low market would only have the affect of lengthening the life of the property and making the operator short of funds at a time when he needs it most."

The next problem, Mr. Dorn said, was to find the best method of extraction. They experimented with the old circular method, then the four spot method, then the straight line method with every other well producing oil, and finally the triangular pressure system. It is the triangular pressure that is being used now and it has proved very successful.

The 30-Year Method

All the properties were mapped in 30-year pressure units, that is, to totally deplete these units in 30 years. It was found that drilling of the necessary wells, power installations, and operating costs averaged about $8,000 per acre. This would make the total cost of development of a 100-acre piece $800,000 over the period of depletion. This seemed an enormous amount of money but when the revenue, based on $3 oil and a recoverable content per acre of 6,000 barrels is considered, it figures $18,000 gross per acre, or $10,000 net profit per acre, which is $1,000,000 net on a 100-acre tract, minus, of course, the purchase price.

"This would look," Mr. Dorn concluded, "as though owners own much more property than they can reasonably operate. The producers as a class all have the buying fever. It is a very common thing for a producer to buy new property when the property he already has is crying for development. This disease, while seldom fatal, affects the producers' financial structure to a very serious degree. Realizing that we had a serious infection of this fever ourselves, we endeavored to take the counteracting dose of development."

"Cream of the Oil"

A large part of the afternoon session was devoted to the telling of the aims and principles of the Pennsylvania Grade Crude Oil Association. The speakers on this subject were E. M. Lyons, C. G. Dorn, and J. O. Young. They detailed the start of the association, told of the need of advertising the Pennsylvania crude oil, which they called "the cream of oil," and then outlined the plan with an appeal for those present to get behind the movement in order that it might be started immediately and result in the greatest possible amount of good to all concerned. In introducing the speakers on this subject, Mr. Thornton said that he believed that it is the most important thing confronting the oil industry today.

Much of the credit for the success of the convention was due to the work of Mr. Thornton, the president of the association. He is a hard worker and has succeeded in making this organization a most efficient one. The banquet was held in the Christian temple.

The set of drilling tools used by Colonel Drake were on exhibition, having been shipped back from Tulsa by express.

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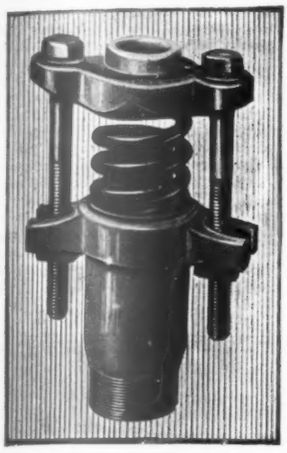

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FUEL OIL COMPETITION AS COAL MEN SEE IT

At the recent meeting of the Pacific Coast Co. continuation of coal operations in the face of cheap fuel oil competition was discussed and it was decided that for the winter, at least, there should be no change in policy. Jefferson M. Levy, a stockholder, questioned the wisdom of continuing coal operations in face of oil competition, making the business unprofitable.

President W. M. Barnum said coal mines were operated on a paying basis until the United Mine Workers of America advanced wages to a point where it was impossible to pay them. The result was the 1921 strike. This was followed by California's oil flush, and until this ends there can be no profits from coal.

Mr. Barnum said the company is confronted with the question of retaining and maintaining its coal properties, a $7,000,000 asset, or scrapping them. "If we maintain and operate the properties," he said, "we may be able to recover on them. Best opinions on the oil situation say the peak of production has been reached. We cannot expect any change during the present fiscal year. There is enough oil in storage to last for some time. But if the oil flush ends, the Pacific Coast Co. will not be able to supply the coal demand to the Northwest."

Mr. Barnum explained that at present fuel oil, equivalent to 1,000,000 tons of coal is consumed annually in the territory tributary to the mines of the Pacific Coast Co. In spite of this situation, three mines are now operating on practically full time and the outlook is that these properties will break even during the winter.

ASK BID ON ELECTRIC POWER IN SALT CREEK

CASPER, Wyo., Oct. 20.—The great project that will electrify the Salt Creek Field and provide electric power to pump the wells of the Midwest Refining Co. and associated firms, has been authorized by the officials of that firm and bids are now being asked for the construction and installation of the buildings and equipment. This project was described in detail in The Oil and Gas Journal last spring.

The present expenditure authorized calls for a sum of about $8,000,000 and this will complete the power house, run several of the main transmission lines over the field, and install some of the generators. The whole plant is expected to cost about $50,000,000 when completed.

In the planning and building of this great plant, the Midwest Refining Co. has looked ahead for at least three years. At present there is no need of such a plant in the field, except that the use of gas to generate electricity would cut down the overhead somewhat for drilling. Also, it would be possible to install large gas engines to generate the electricity instead of steam, as the plans call for, but if the gas does fail after while, such a plant would suddenly find itself a mass of junk without gas to operate upon, while with steam, several sources for fuel are open in case of the failure of the gas. Within a few miles is a large deposit of coal that could be utilized in case of need.

It has been computed by the Midwest engineers that it is much cheaper to make the electricity for the Casper refineries at Casper than to build a transmission line to carry the power from the Salt Creek Field. The Midwest at Casper now has a transmission line about 3 miles long extending north from Casper to the north tank farm, where electric motors drive the pumps that transfer oil from one tank to another or send it over the hill into Casper to the refineries there.

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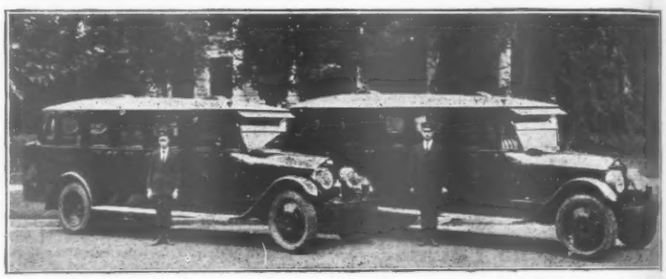
PARLOR MOTOR BUS SERVICE QUITE DIFFERENT FROM OLD BUCKBOARD

In line with the gigantic strides made by the petroleum industry in all branches—producing refining and marketing—and by oil field equipment and supply concerns in improving devices, tools and equipment used by oil men, is the improvement made in the matter of transportation in oil field territory. Just as the 300-pound drilling tools used by Colonel Drake in drilling the world's first oil well are obsolete as compared to the two-ton tools now in use, and as the old ox-drawn wagons cannot be compared to the powerful motor vehicles for carrying heavy supplies and equipment, so has the old buckboard and team method used by oil men in their work in the various fields given way to the automobile as a means of transportation.

One of the most notable of recent improvements in transportation in the territory around Tulsa, the oil capital of the world, is the installation of parlor motor busses in a scheduled service connecting Tulsa and Muskogee, Okla., and connecting with other motor bus services covering the oil towns in the district. The new motor vehicles were placed in service by Ward Faulkner of The Ward Way, Inc., who has been operating motor busses out of Muskogee to the oil fields for four years. These busses make three trips daily between Tulsa and Muskogee. They can seat 18 persons and are completed inside in regular Pullman style with separate smoking compartment, carpeted floors, upholstered seats and other conveniences and comforts for passengers.

The buckboard was discarded quite a long time ago in the Tulsa territory, a majority of the oil scouts and field workers having their own automobiles, but the installation of a regularly scheduled motor bus line with the type of cars used in this service, has helped greatly in making travel in the oil field territory considerably more convenient and comfortable.



"Miss Tulsa" and "Miss Muskogee," two of the cars in use in Tulsa-Muskogee motor bus service

OIL SECURITIES, IN VOLUME OF TRADING, EXCEED OTHER STOCKS

By N. O. Fanning

NEW YORK, Oct. 22.—Oil securities, in point of volume of trading, topped the entire list of stocks traded in on the New York Stock Exchange during the calendar year 1922, with a total turnover of 48,209,342 shares. Railroad stocks were second with a turnover of 36,185,565 shares and steels third with 24,254,153 shares, while automotive securities, including motors, tire and rubber and motor accessories, came fourth, with 22,896,248 shares. These figures are furnished The Oil and Gas Journal by J. James Scott, of Barstow & Co., who made the compilation.

The significance of this according to Mr. Scott is that oil stocks will in all probability carry the rest of the market upward, owing to the fact that the oils are the most important speculative group on the Exchange. Out of 150 of the most active stocks listed on the Big Board, 28 or nearly 20 per cent, were oils.

The Oil and Gas Journal's average price of twenty representative oil stocks listed on the New York Stock Exchange shows a fairly constant upward movement during 1922, which indicates that the large turnover of oil stocks was to a great degree buying. It is interesting that during this year the course of oil stocks was reversed, and that the aggregate decline this year so far is almost double the extent of the rise last year. Whether oil stocks have been oversold or not only the future will tell, but if this class of securities has turned the corner, and shows an advance from now on, stocks of companies operating in the other leading industries should aso go up.

Oils Important Factor

The fact that oil stocks lead the entire list in point of activity, and that out of 150 most active stocks, 20 per cent were oils, is important not only from a speculative viewpoint, but also from the point of view of the place which oil now occupies in American business and finance. It must be remembered that while there are now more than forty oil issues listed on the New York Stock Exchange, up to the close of the World War there were only seven. In 1919, five were listed, and in 1920 twenty more, making a total of 32 oil stocks at the close of that year; yet, in this short period ,oil stocks have gained the ascendancy in speculative interest over stocks representing all other industries!

In aggregate turnover during 1922 Mexican Petroleum stock leads the list of oils. with 5,902,968 shares. Studebaker, with 8,724,250 shares; U. S. Steel, with 8,037,810 shares, and Pere Marquette, with 7,301,000 shares, were the only issues exceeding that total.

Second in the list of oil stocks was Sinclair Consolidated, showing a total of 5,715,500 shares traded in. Pan-American Petroleum was third among the oils with 4,135,150, while Cosden was fourth with 3,537,349. It is significant that all these figures exceed the number of outstanding shares of the companies concerned.

Oil Stock Turnovers

The following table shows the 1922 turnover, or number of shares of stock traded in, of the 28 most active oil stocks listed on the New York Stock Exchange, together with the number of shares outstanding at the close of the year:

Company	Turnover No. Shares	Shares Outstanding
Mexican Petroleum	5,902,968	431,657
Sinclair Consolidated	5,715,500	4,491,892
Pan American Petrol.	4,135,150	1,081,554
Cosden & Co.	3,537 349	1,196,634
The Texas Co.	3 305,800	6,578,000
Transcontinental Oil	2,238,000	2,000,000
Pan American Pet. B.	2,159,200	1,121,756
Middle States Oil.	1,926,700	2,291,700
Standard of California	1,764,510	5,179,275

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New York Kansas City Los Angeles Tulsa Refinery: Barnsdall, Ok.

Producers & Refiners	1,665,500	424,428
Royal Dutch & Shell	1,642,960	.....
Phillips Petroleum	1,385,700	697,000
Standard of New Jersey	1,265,620	3,955,173
Marland Oil	1,260,900	928,767
Texas Pacific C. & O.	1,259,294	844,805
Island Oil & Transport	1,223,176	2 570,951
Pierce Oil	1,002,950	1,049,913
Union Oil of Delaware	945,300	1,389,000
California Petroleum	943,400	173,770
Kansas and Gulf	845,150	1,412,214
Mexican Seaboard Oil	830,400	434,939
Oklahoma Prod. & Refg.	784,200	4,308,200
Barnsdall Corp. "A"	762 700	520,000
Houston Oil	667,000	249,686
Invincible Oil	570,800	319,058
Pacific Oil	522,575	3,500,000
White Oil	476,800	689,046
Skelly Oil	469,900	1,998,954

The total turnover of these 28 stocks amounted to 48,209,342 shares.

The following table is of interest as showing the number of shares turned over in the various industries represented on the New York Stock Exchange:

	No. Shares Traded in
Oils	48,209,342
Rails	36,185,565
Steels	24,254,153
Automotives:	
Motors	18,201 399
Tire & Rubber	2,964,650
Motor Accessories	1,730,199
Equipment	7,807,303
Public Utility	7 048,930
Coppers	6,891,995
Food Stocks	6,251,075
Tobacco	4,813,120
Fertilizers, Chemical	4,106,187
Shipping	3,709 825
Textile	3,008,690
Sugar	2,745,950
Miscellaneous Mining	2,050,048
Mail Order	1,949,100
Coal	1,504,000
Leather and Shoe	1,199,450
Miscellaneous	7,981,844
Total	192,621,465

The foregoing figures again prove that petroleum is one of the world's leading industries, if it has not now taken its place as the greatest.

MEXICAN BUDGET IS DEPENDENT UPON OIL

NEW YORK, Oct. 22.—There is in every Mexican budget a great and unknown quantity, and that is petroleum. In 1921 this produced close upon 60,000,000 of pesos for the national coffers, but since then the figures has decreased to some extent. There is no doubt, however, that petroleum alone may easily place a totally different aspect on any future budget. If petroleum companies continue to confine their energies to already known and exploited fields, then there is but small hope for heavy Government receipts. But if, as has been said so many times, the companies are only awaiting satisfactory solution of their aspirations regarding the important Article 27 of the Mexican Constitution, then Mexico's vast and virgin oil lands may well give such an increased production within a few months as will make a substantial difference in the amount to finally reach the Mexican treasury by the way of taxation. In a word, before Mexico's account is presented, petroleum may practically have balanced her finances without the necessity of increased taxation of other sources of income.

PROMOTERS FACE INDICTMENT

Thousands of credulous oil investors of Los Angeles and southern California watched their hopes of sudden wealth dissipate into thin air recently, when the Federal Government exploded its first great mine under the camp of the asserted "blackleg" oil companies of Los Angeles, alleging fraud, and gross misrepresentations sent through the United States mails.

Two oil companies, which are asserted to have made approximately $2,000,000 from nearly 15,000 investors, were named in the indictments by the Federal grand jury. These concerns are The Joe B. Turman Oil Syndicate No. 2 and the Industrial Oil Syndicate and its associated branches.

The Turman company, it is said, carried on its alleged operations in connection with the exploitation of a 6-acre lease held by it in the Santa Fe Springs Field. David Cahill, who is chief of the Federal squad of oil fraud investigators, stated that the activities of several hundred other promoters are being investigated and he expected to have many of them indicted.

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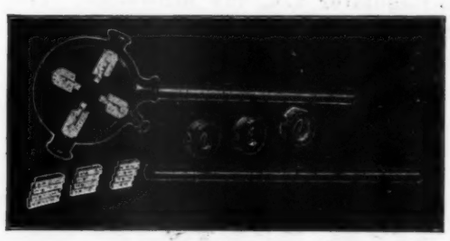

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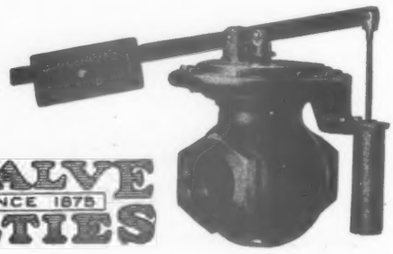

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Transporting Facilities

SHIPMENT OF OIL FROM MEXICO DURING THE MONTH OF SEPTEMBER

By George Blardone

TAMPICO, Mexico, Oct. 20.—Shipments of petroleum from Mexican ports of primary clearance during the month of September totaled 11,211,027 bbls., a decrease over the August vessel movement of more than 1,000,000 bbls., although it is an increase over the movement during September one year ago of 260,125 bbls. The heavier oils of the northern district (i.e. Panuco, etc.) were represented by 6,392,742 bbls., a decrease of 500 000 bbls. from the August figures for this class of petroleum. The remaining decrease was South Fields oils (i.e. the light crudes). The decreases refer to a curtailment of vessel allotments to Mexico during the month under discussion, however, rather than to production available for export.

By classes the vessel movement was as follows: Crudes, 6,301,771 bbls.; topped crudes, 3,744,857 bbls.; distillates, 611,075 bbls., while bunker oils, added to balance, totaled 553,324 bbls.

The September movement, in detail, follows:

FROM TAMPICO

By Huasteca Petroleum Co. (Mexican Petroleum)

Sept.	Rig	Vessel, destination—	Bbls.
1	Ss.	F. R. Kellog, Panama	*61,259
2	Ss.	Massasoit, New York	**45,264
2	Ss.	N. Bridge, Jacksonville	*40,627
3	Ss.	Uncas, New York	*42,442
3	Ss.	E. L. Doheny, Galveston	*61,726
3	Ss.	W. L. Steed, New York	57,136
7	Ss.	Wm. Green, New Orleans	[illegible]
7	Ss.	Inveravon, Southampton	*57,517
8	Ss.	Panoil, Tampa	*14,328
9	Ss.	W. H. Tilford, New York	**61,328
9	Ss.	Tecumseh, Providence	**68,790
9	Ss.	G. W. Barnes, Galveston	*64,798
9	Ss.	C. E. Harwood, New York	*31,358
10	Ss.	Inverurie, Southampton	*56,679
10	Ss.	Invergordon Southampton	*57,859
10	Ss.	Mexoil, Houston	545
10	Ss.	Mexoil, Houston	*14,318
10	Ss.	Fueloil, Tampa	*14,211
12	Ss.	Caloric, Southampton	*58,471
12	Ss.	E. L. Doheny, Providence	*61,044
13	Ss.	Montana, New York	64,058
14	Ss.	P. H. Harwood, Boston	*65,413
14	Ss.	H. G. Wylie, Galveston	*40,330
15	Ss.	G. W. Barnes, New York	*62,388
15	Ss.	N. Bridge, Port Tarafa	*40,457
15	Ss.	C. Anderson New Orleans	**77,664
16	Ss.	S. Musian, Hamburg	*60,343
16	Ss.	Mirlo, Providence	**79,031
16	Ss.	Deam Emery, Portland	60,845
17	Ss.	Mexoil, New Orleans	14,630
17	Ss.	Wyneric, Glasgow	*39,277
18	Ss.	Inverlea, Liverpool	*56,647
18	Ss.	Meline, New York	*64,826
18	Ss.	Mascomono, New York	*
18	Ss.	Panoil, Houston	*14,682
19	Ss.	J. O. Boyd, New Orleans	*
20	Ss.	Oyleric, Southampton	*54,629
20	Ss.	O. D. Bennett, New Orleans	46,186
21	Ss.	F. Ewing, New York	*63,813
21	Ss.	H. G. Wylie, Boston	*40,959
21	Ss.	Fueloil, Miami	*14,272
22	Ss.	Inverarder, Thameshaven	*48,406
24	Ss.	W. L. Steed, Galveston	*60,708
27	Ss.	E. L. Doheny 3, New York	*63,826
27	Ss.	E. L. Doheny 3, New York	5,227
29	Ss.	O. D. Bennett Portland	*44,420
30	Ss.	W. L. Steed, New York	*58,293
30	Ss.	N. Bridge, Galveston	*41,152
		Bunkers deliveries	155,688
		Total	2,437,820

By Cia. Mexicana Holandesa La Corona, S. A.

Sept.	Rig	Vessel, destination—	Bbls
2	Ss.	Swiftscout, U. S. A.	71,106
3	Ss.	Trophon, Houston	*32,668
3	Ss.	Gulfstar, U. S. A.	71,914
4	Ss.	Golaa, U. S. A.	56,953
4	Ss.	Absia, Egypt	*42,149
4	Ss.	Artemis, Canada	**17 723
4	Ss.	Lampas, Europe	46,603
5	Ss.	British Star, U. S. A.	62,908
6	Ss.	Niobe, U. S. A.	68,823
7	Ss.	E. V. R. Thayer, Philadelphia	65,699
7	Ss.	Madrono, U. S. A.	55,741
9	Ss.	Gulfstate, U. S. A.	64,219
13	Ss.	Scot American, New Orleans	64 013
14	Ss.	Litiopa, Las Palmas	43,681
14	Ss.	Trophon, Europe	33,066
14	Ss.	Conde de Churruca, New Orleans	41,270
16	Ss.	Cardita, Canada	*49,761
19	Ss.	Scot Borderer, Wilmington	60,494
20	Ss.	Mary Luckenbach, U. S. A.	47,693
20	Ss.	Vaarli, New York	*3,029
21	Ss.	British Light, New Orleans	56,125
21	Ss.	E. D. de la Meurthe, Europe	45,647
22	Ss.	G. H. Jones U. S. A.	64,096
23	Ss.	Ligonier, U. S. A.	30,101
24	Ss.	Golaa, Brunswick, Ga.	57,283
24	Ss.	Vaba, U. S. A.	43,226
25	Ss.	Eurana, U. S. A.	61,955
25	Ss.	Conde de Churruca, Europe	*39,051
27	Ss.	Malmanger, U. S. A.	63,546
28	Ss.	Corbis, Egypt	*49,355
28	Ss.	Scot American, London	*60,271
29	Ss.	Marinula, Europe	*48 696
29	Ss.	Queen Louise, London	*48,302
30	Ss.	British Light, U. S. A.	57,218
30	Ss.	British Star, Europe	*58,729
		Coastwise deliveries	*47,657
		Bunkers deliveries	114,608
		Total	1,945.379

By Transcontinental Petroleum Co.

Sept.	Rig	Vessel, destination—	Bbls.
1	Ss.	Wellington, Cuba	35,[illegible]
1	Ss.	Astec, Fall River	34,[illegible]
2	Ss.	Corning, Jacksonville	46,[illegible]
2	Ss.	Freeport Sulphur No. 1, Freeport	49,[illegible]
5	Ss.	Baytown, Baytown	33,[illegible]
6	Ss.	Eurana, Baltimore	32,[illegible]
7	Ss.	Freeport Sulphur No. 6, Freeport	48,[illegible]
7	Ss.	Cedarhurst, Philadelphia	43,[illegible]
7	Ss.	Baton Rouge, Baton Rouge	43,[illegible]
9	Ss.	Mary Luckembach, Port Tampa	46,[illegible]
10	Ss.	Galena, Baton Rouge	47,[illegible]
10	Ss.	Pioneer, New York	46,[illegible]
10	Ss.	Princeton, Baton Rouge	46,[illegible]
12	Ss.	Freeport Sulphur No. 6, Freeport	48,[illegible]
13	Ss.	Dunganon, Philadelphia	47,[illegible]
14	Ss.	Cassimir, Baton Rouge	43,[illegible]
17	Ss.	Baytown, Baytown	47,[illegible]
17	Ss.	Corning, Key West	39,[illegible]
18	Ss.	Swifteagle, Fall River	47,[illegible]
19	Ss.	City of Freeport, Baton Rouge	74,[illegible]
20	Ss.	Baytown, Baytown	33,[illegible]
20	Ss.	Swiftarrow, Fall River	33,[illegible]
20	Ss.	Vaarli, New York	70,[illegible]
24	Ss.	Swiftarrow, Fall River	55,[illegible]
22	Ss.	S. V. Harkness, Port Rico	4,[illegible]
22	Ss.	S. V. Harkness, Port Rico	35,[illegible]
24	Ss.	Thomas R. Wheeler, Cuba	21,[illegible]
24	Brg.	Freeport Sulphur No. 4, Freeport	66,[illegible]
24	Brg.	Freeport Sulphur No. 3, Freeport	14,[illegible]
26	Ss.	Pioneer, New York	33,[illegible]
26	Ss.	J. F. Farrell, Fall River	48,[illegible]
27	Ss.	Baytown, Baytown	43,[illegible]
27	Ss.	Baton Rouge, New York	32,[illegible]
28	Ss.	John Worthington, New York	48,[illegible]
28	Ss.	Corning, Jacksonville	72,[illegible]
29	Ss.	Cedarhurst, Baton Rouge	49,[illegible]
29	Ss.	City of Freeport, Baton Rouge	14,[illegible]
29	Ss.	Cedarhurst, Baton Rouge	27,[illegible]
30	Ss.	Calahonda, New York	22,[illegible]
		Bunkers deliveries	48,[illegible]
		Total	44,631
			1,644,[illegible]

By Mexican Eagle Oil Co., Ltd.

Sept.	Rig	Vessel, destination—	Bbls.
2	Ss.	San Zotico, New York	*51,[illegible]
2	Ss.	San Fernando, Lizard Point f/o	*91,[illegible]
2	Ss.	San Manuel, Lizard Point f/o	*38,[illegible]
4	Ss.	San Ricardo, Montreal	*56,[illegible]
6	Ss.	San Jeronimo, Devonport	*83,[illegible]
7	Ss.	San Dunstano, London	*81,[illegible]
8	Ss.	San Roberto, Montreal	*45,[illegible]
10	Ss.	San Melito, Lizard Point f/o	*94,[illegible]
13	Ss.	Sheafspear, Puertos del Brazil	**9,[illegible]
14	Ss.	Camden Panama	*59,[illegible]
14	Ss.	San Lamberto, Havana	*54,[illegible]
15	Ss.	Scottish Maiden, Rouen & Saint Loubes	**73,[illegible]
20	Ss.	San Zotico, Lizard Point f/o	*51,[illegible]
21	Ss.	Borgestad, New York	*34,[illegible]
22	Ss.	San Quirino, Lizard Point f/o	**59,[illegible]
24	Ss.	San Silvestre, Santos & Buenos Aires	*34,[illegible]
24	Ss.	San Silvestre, Buenos Aires	**38,[illegible]
25	Ss.	War Nizam, Devonport	*58,[illegible]
27	Ss.	San Lamberto, Puerto Cortez, C. A.	*54,[illegible]
27	Ss.	San Leon, Philadelphia	*52,[illegible]
30	Ss.	San Gerardo, South Amer. Ports	*85,[illegible]
30	Ss.	Camden, Panama	*68,[illegible]
		Coastwise deliveries	**23,[illegible]
		Coastwise deliveries	*211,[illegible]
		Bunkers deliveries	111,[illegible]
		Total	1,650,[illegible]

By Freeport & Mexican Fuel Oil Corp. (Sinclair Interests)

Sept.	Rig	Vessel, destination—	Bbls.
1	Ss.	A. E. Watts, New Orleans	64,[illegible]
2	Ss.	Panuco, Cuba	25,[illegible]
6	Ss.	Gene Crawley, Jacksonville	31,[illegible]
9	Ss.	Harry Farnum, Cuba	33,[illegible]
9	Ss.	W. L. Connelly, Cuba	31,[illegible]
9	Ss.	E. W. Sinclair, Cuba	45,[illegible]
11	Ss.	W. E. Ogilvie, Houston	10,[illegible]
15	Ss.	Madrono, New Orleans	35,[illegible]
17	Ss.	J. F. Farrell, New Orleans	46,[illegible]
19	Ss.	Panuco, Houston	34,[illegible]
19	Ss.	Miller County, New York	67,[illegible]
20	Ss.	E. W. Sinclair, Houston	43,[illegible]
24	Ss.	Madrono, New Orleans	66,[illegible]
25	Ss.	W. L. Connelly, Jacksonville	31,[illegible]
25	Ss.	Gene Crawley, Pt. Barrios, C. A.	33,[illegible]
26	Ss.	E. W. Sinclair, Houston	44,[illegible]
		Bunkers deliveries	35,[illegible]
		Total	679,[illegible]

By East Coast Oil Co.

Sept.	Rig	Vessel, destination—	Bbls.
1	Brg.	Sulphur No. 3, Freeport	14,[illegible]
1	Brg.	Sulphur No. 4, Freeport	14,[illegible]
5	Ss.	Topila, Galveston	49,[illegible]
8	Ss.	Sulphur No. 1, Freeport	19,[illegible]
9	Ss.	Torres, Galveston	50,[illegible]
9	Brg.	Sulphur No. 4, Freeport	16,[illegible]
12	Ss.	Sulphur No. 1, Freeport	19,[illegible]
13	Ss.	Topila, Galveston	48,[illegible]
17	Ss.	Sulphur No. 6, Freeport	27,[illegible]
17	Ss.	Tamiahua, Galveston	90,[illegible]
20	Ss.	Torres, Galveston	49,[illegible]
23	Ss.	Tamiahua, Galveston	89,[illegible]
26	Ss.	Topila, Galveston	50,[illegible]
28	Ss.	Sulphur No. 1, Freeport	19,[illegible]
29	Ss.	Sulphur No. 6, Freeport	29,[illegible]
30	Ss.	Torres, Galveston	50,[illegible]
		Bunkers deliveries	8,[illegible]
		Total	646,[illegible]

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By Mexican Gulf Oil Co.

Sept.	Rig	Vessel, destination—	Bbls.
1	Ss.	Winifred, Port Tampa	18,483
4	Ss.	Gulfpoint, Port Arthur	69,159
7	Brg.	Monongahela, Port Arthur	18,734
7	Brg.	Connemaugh, Port Arthur	16,629
8	Ss.	Currier, Port Arthur	46,137
12	Ss.	Winifred, Houston	19,243
17	Ss.	Gulftrade, Port Arthur	73,374
22	Ss.	Winifred, Port Tampa	18,531
27	Ss.	Gulfstar, Port Arthur	68,869
		Bunkers deliveries	13,102
		Total	362 261

By The Texas Co. of Mexico, S. A.

Sept.	Rig	Vessel, destination—	Bbls.
3	Ss.	Derbyline, Port Neches	62,720
6	Ss.	Louisiana, Port Neches	26,807
12	Ss.	Louisiana, Port Neches	26,680
15	Ss.	Reaper, Providence	*57,125
15	Ss.	Alabama, Charleston	*25,556
18	Ss.	Texas, Port Neches	50,724
18	Ss.	Texas, Port Neches	**7,795
21	Ss.	Louisiana, Port Neches	26,082
26	Ss.	Texas, Port Neches	56,298
		Bunkers deliveries	14,360
		Total	354,147

By New England Fuel Oil Co.

Sept.	Rig	Vessel, destination—	Bbls.
5	Ss.	Chuky, Tocopilla	62,733
15	Ss.	Toco, Tocopilla	63,899
18	Ss.	Wellington, New Orleans	6,419
23	Ss.	Swiftlight, Texas City	69 210
		Bunkers deliveries	17,579
		Total	219,840

By Chadick & Co.

Sept.	Rig	Vessel, destination—	Bbls.
20	Ss.	Gulfoil, Texas City	48,190
27	Ss.	Derbyline, Philadelphia	63,879
		Bunkers deliveries	1,772
		Total	113,841

By Imperial Oil & Gas Co.

Sept.	Rig	Vessel, destination—	Bbls.
14	Ss.	Newona, New Orleans	23,109
15	Ss.	Dora, Philadelphia	50,481
24	Ss.	Newona, New Orleans	23,181
		Total	96,771

By U. S. Mex Oil Corp.

Sept.	Rig	Vessel, destination—	Bbls.
10	Ss.	Catahoula New York	44,038
13	Ss.	Wm. Isom, Baltimore	29,762
		Bunkers deliveries	2,872
		Total	76,672

By Interocean Oil Co.

Sept.	Rig	Vessel, destination—	Bbls.
25	Ss.	Aztec, Baltimore	52,380

By Panuco-Boston Oil Co.

Sept.	Rig	Vessel, destination—	Bbls
1	Ss.	Vaba, Philadelphia	42,973
26	Ss.	Thayer, Philadelphia	64,538
		Total	107,511

By Pierce Oil Corp.

Sept.	Rig	Vessel, destination—	Bbls.
14	Ss.	A. E. Watts, New York	*64,890

By International Pet. Co.

Sept.	Rig	Vessel, destination—	Bbls.
18	Ss.	Wellington, New Orleans	20,277

FROM PORT LOBOS

By International Petroleum Co.

Sept.	Rig	Vessel, destination—	Bbls.
1	Ss.	City of Freeport, New York	40 628
1	Ss.	Gedania, Montreal	87,451
18	Ss.	Trontolite, Montreal	64,284
		Coastwise deliveries (P. Mexico)	101,607
		Total	293,970

By Cia. Petrolera del Agwi, S. A. (Atlantic Gulf Oil Corp.)

Sept.	Rig	Vessel, destination—	Bbls.
9	Ss.	Agwiworld, Boston	71,272
15	Ss.	Agwimars, Boston	72,572
30	Ss.	Agwiworld, Boston	71,450
		Coastwise deliveries (Progreso, Mex.)	*8,630
		Bunkers deliveries	*539
		Total	224 464

By The Texas Co. of Mexico, S. A.

Sept.	Rig	Vessel, destination—	Bbls.
29	Ss.	Pennsylvania, Spezia, Italy	*57,672
30	Ss.	Louisiana, San Juan, P. R.	*20,321
		Bunkers deliveries	13,881
		Total	91,874

FROM TUXPAM

By Mexican Eagle Oil Co., Ltd.

Sept.	Rig	Vessel, destination—	Bbls
2	Ss.	San Fabian, Buenos Aires.	*43,415
3	Ss.	San Fernando, Lizard Point f/o	*21,020
8	Ss.	San Jeronimo, Devonport.	*11,563
11	Ss.	San Melito Lizard Point f/o	*11,224
		Coastwise deliveries	**1,407
		Bunkers deliveries	39,592
		Total	128,221

SEPTEMBER SUMMARY

From—	Bbls.
Tampico	10,472,498
Port Lobos	610.308
Tuxpam	128,221
Total September, 1923	11,211,027
Total September, 1922	10,950,902
Increase September, 1923	260,125

DIVISION OF MOVEMENT

To—	
United States	7 254,480
United Kingdom	1,088,893
Mexican coastwise	494,676
Continent	462,937
Canada	324,813
South America	320,183
Cuba	311,546
Panama	179,271
Med. Ports	91,504
Central America	85,720
Azores	43,681
Bunkers (to balance)	553,324
Total	11,211,027

(Note—*Denotes topped crude. **Denotes distillates.)

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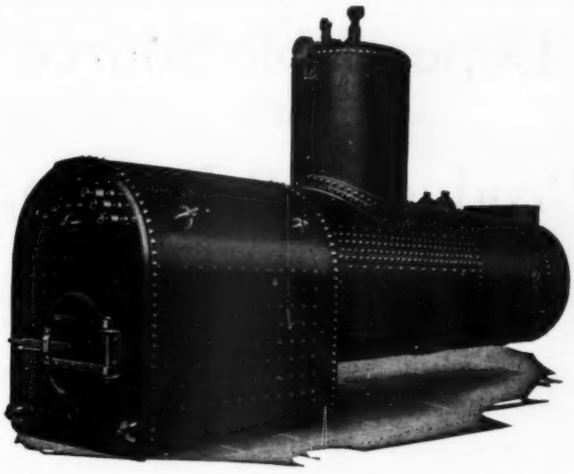

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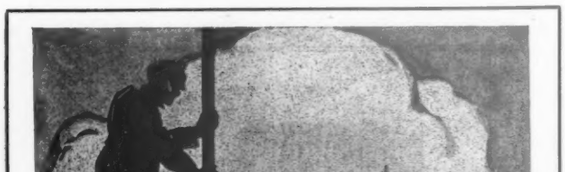

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California Decline Will Continue Says S. A. Guiberson, Jr.

NEW YORK, Oct. 20.—S. A. Guiberson, Jr., chairman of the Prorating Committee of the Southern California Oil Producers' Association, said here that production of crude oil in those fields was declining and would continue to decline until consumption on the Pacific Coast reaches the point where it will take up the slack of overproduction, which has proved the industry's principal unsettling factor this year. The California production now is approximately 834,000 barrels per day, and Mr. Guiberson said the difficulty surrounding the drilling and bringing in of new wells militated against a possible increase of this rate.

"The peak of potential production of oil in California was passed in the latter part of July and the first part of August," said Mr. Guiberson. "Statements in Wall Street, obviously bearish in character, that the oil production in California would almost amount to 1,250,000 barrels per day, if opened wide, are untrue.

Amount Shut In

"About July 1 there were approximately 100,000 barrels of oil shut in in the oil fields and this amount has been figured as shut in oil ever since, while as a matter of fact it is probably not over 75,000 barrels at this time. A prorate of production in the three new fields—Santa Fe Springs, Huntington Beach and Long Beach—was put into effect at about that time. This ran from 30 per cent in June to 50 per cent on all new wells in July and August. Our estimates placed this shut-in oil in the new fields at about 50,000 barrels in June, 100,000 barrels in July 1 to 15, 150,000 barrels July 15 to August 15, and back to less than 25,000 barrels on September 10, with none whatever October 1.

"On October 6 the actual production was 934,000 barrels, with probably less than 80,000 barrels shut in, making a potential production of 914,000 barrels as of that date."

There has been a great deal of interest in the oil industry in regard to production in the new fields of Compton and Torrance and how these fields would affect the present situation in the oil industry. In this connection Mr. Guiberson said:

"The Union Oil Co. has one well at Compton, producing between 1,000 and 1,500 barrels per day, and that company holds leases on practically everything that looks to be good in that field. There are only three or four leases in all, so that they will not be compelled to drill many wells, and it is a certainty that they will hold this field as a reserve supply of oil, to be drawn on when more production is required.

"The Torrance Field covers a considerable area, but the wells are small, ranging from 200 barrels to 800 or 900 barrels. The oil is under 30 gravity, and a most liberal estimate would not put this field at over 40,000 barrels to the acre. At the present price of oil it will require the production from approximately 10 acres to pay the cost of drilling one well and to produce the oil from same. Under these conditions, development of this field is not going to be a very big factor, at least until the price of oil will justify drilling."

Complete Two a Day

Mr. Guiberson said it should be remembered that there are approximately two wells a day being completed in the new fields, but that these new wells were failing to maintain even present production.

Practically all of the new production in California was coming from levels below 4,000 feet, said Mr. Guiberson, with the result that the companies were finding it more and more expensive to continue operations.

He expressed the opinion that the prorating system in times of flush production was the only practical way of dealing with the existing emergency. The plan had proved its efficacy in southern Cali-

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TEXAS

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fornia, although a drawback had been the law prohibiting the companies from getting together and doing anything that would affect the price of the commodity either one way or the other.

John D. Had Faith In the Oil Business When Facing Deficit

ATLANTIC CITY, N. J., Oct. 20.—An unpublished incident in the life of John D. Rockefeller, when his oil business, less prosperous than now, was facing a deficit, was told by Henry L. Doherty of New York, president of the Cities Service Co., who is here for the American Gas Association convention.

Mr. Rockefeller was at a meeting where it was suggested that it would be better for those present to get out of the oil business and enter a more stable line. After listening attentively, and when pessimism became most pronounced, Mr. Rockefeller rose, and pointing to the ceiling, said:

"The Lord will provide."

"Mr. Rockefeller was right," commented Mr. Doherty.

TEXAS U NOT SO RICH FROM THE REAGAN WELL

AUSTIN, Tex., Oct. 20.—While wild estimates are being circulated that the University of Texas will be the richest school in the world as the result of discovery of oil on university lands in Reagan County, it has been computed if the 50 wells proposed in the sale of 10,000 acres of land, including the discovery Santa Rita well, are drilled, and every one produces as much oil as the Santa Rita—100 barrels a day, and keeps up the production all the year around, that the university revenue would be only $250,000 a year from its one-eighth royalties on all oil produced.

The Texon Oil Co., owner of the Santa Rita well, was reported to have sold 10,000 acres of leases to the Transcontinental Oil Co. The Texon retains 46,000 acres of lease in the same district, it is reported. The university gets 10 cents per acre for its leases, plus the royalty on oil. So far, it has received about $400 royalties from the Santa Rita well.

BLANKET-EXPLORING PERMIT

NEW YORK, Oct. 22.—For the first time in the history of the petroleum industry a blanket permit for exploration drilling has been granted by the Mexican Department of Industry. Jones & Co., the landholding subsidiary of the Mexican Seaboard Oil Co., has been granted the right to start work in four widely separated zones in the states of Tamaulipas, Vera Cruz, Chiapas and Tabasco, totaling 140,000 acres. Permission is given for drilling of as many wells as the company desires, with a stipulation that not less than two wells be started within six months. Drilling rights were granted without search of title, but a fine of 10,000 pesos will be imposed for failure to present notarial titles for land in question within six months from the granting of the permit or within three months on land where actual drilling is commenced. While exploration rights granted by the Secretary of Industry allow drilling without restriction, they do not grant exploration should oil be found.

MOTORS IN AUSTRALIA

The Australian National Roads Association is campaigning to have all revenue derived from motor traffic applied to road improvement and if it succeeds a great future is predicted for the automobile. One Australian in 67 now owns a car, compared with one in 10 in America while per capita wealth of Australia is $1,847, against the United States' $2,648. The Australian is the fifth richest, nationally in the world. Railroad mileage is one-tenth of that in the United States, about the same territory.

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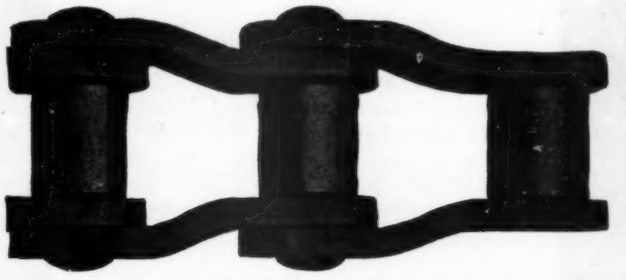

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South Africa Fast Becoming Potential Petroleum Market

South Africa is fast becoming a potential market for the oil exporter, as it is located at a considerable distance from the principal sources of petroleum supplies and has no commercial production of its own. This territory, including the Union of South Africa, Northern and Southern Rhodesia and the Southwest African Protectorates, consumes fairly large quantities of mineral oils, according to reports of the Department of Commerce, which state that in the shipment of gasoline the South African market is of more importance than many European countries or any of the South American countries except Argentina and Brazil; and that South Africa also imports about as much American kerosene as all of Latin America combined, outside of Argentina and Brazil, and more than some other markets, such as Spain, Greece or New Zealand.

As in several other countries which have no domestic petroleum production there is considerable interest in the development of substitutes, particularly for gasoline, and an interesting variety of motor fuels has appeared on the South African market. These locally produced fuels do not seriously affect the gasoline trade, although in some instances they are reported to have proved successful and to have been purchased by the Government and private enterprises for use in place of gasoline.

Oil Shale Deposits

Large desposits of oil shale have also been reported in various sections of South Africa, and a number of projects are said to be under way for their development. In spite of the interest being taken in obtaining a local oil industry, it is the belief of the department that it will be necessary to import appreciable quantities of petroleum products for some time to come.

The amounts imported into the various divisions of South Africa during 1922, according to compilations of the Commerce Bureau, are:

Into the Union of South Africa, Northern Rhodesia, Southern Rhodesia, and Southwest Africa Protectorate respectively: Kerosene, 9,210,026 imperial gallons, 30,859, 233,156, 199,912; gasoline and naphthas, 10,671,847 imperial gallons, 22,370, 403,698, 154,658; lubricating oil, 2,431,742 imperial gallons, 20,060, 221,733, 33,225; other mineral oils, including fuel oil, 1,290,300 imperial gallons 24,000, 50,073, 96,679.

Other products include paraffin wax into the Union of South Africa to the extent of 19,266,285 pounds and anti-friction grease of 3,508,068 pounds. Into Northern Rhodesia, tar, pitch and asphalt of 10,416 pounds and anti-friction grease of 35,508 pounds. Into Southern Rhodesia, paraffin and stearin wax of 610,655 pounds and anti-friction grease of 410,623 pounds, and into Southwest Africa Protectory, asphalt and bitumen, 510 pounds; pitch, 2,248 pounds, and tar and substitutes, 74,296 pounds. (One imperial gallon is equal to 1.2 U. S. gallons.)

Imports from U. S.

The foregoing products were imported principally from the United States, the Dutch East Indies, British India and the United Kingdom. The United States leads in supplying all of the principal items, with the exception of fuel oil, and the major portion of the lubricating oils and kerosene is imported from that country. The Dutch East Indies supply the larger portion of the fuel oil imports, practically all of the 1922 receipts being from that source. About 40 per cent of the gasoline imports is also received from the Dutch East Indies, as well as smaller amounts of other products. Paraffin wax is the principal item imported from India, while considerable quantities of paraffin wax, lubricating oil and grease, and some other products are shipped from the United Kingdom.

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The principal importing centers for petroleum products are Johannesburg, Bloemfontin, Cape Town and Durban, in the Union of South Africa, Salsbury and Bulawayo in Southern Rhodesia, and Livingstone in Northern Rhodesia. Practically all products except fuel oil are imported in containers, mostly in tins, but also in barrels and drums, and distributed in the same manner. Gasoline and kerosene are usually distributed only in cases, and there is practically no filling-station business as it is understood in the United States. Gasoline in this country is known as motor spirit, as in England, while kerosene goes by the name of paraffin oil or simply paraffin.

The South African market is covered by several oil companies, which are well established and have built up strong organizations for importing and distributing their products. The British Imperial Oil Co. handling Dutch East Indian and Trindad oils, the Anglo- Persian Oil Co., and three or four huge American companies, together with some smaller firms have installed efficient facilities for storage and distribution, which insure an adequate supply of the various products to this market.

ALBANIAN CONCESSION BEFORE PARLIAMENT

At the present sitting of the Albanian Parliament in Tirana, according to the Balkan correspondent of the Manchester Guardian, the fate of oil concessions will be decided. The Anglo-Persian Oil Co. has asked for a concession for 100 000 acres, offering 75 gold centimes per acre and 13½ per cent of net profits. The Standard Oil Co.'s bid is almost double, and while the Anglo-Persian group asked for the right to choose territory all over the oil area the Standard Oil Co. limits its offer to the Curazo-Berat oil fields. The Sinclair group's bid is half-way between Standard Oil and the English offer. It is learned on good authority that in all likelihood concessions will be granted to the Anglo-Persian Co. despite its low bid. For political considerations Albanian leaders would prefer establishment of an English group, as they believe that in a possible future Balkan crisis Albania needs Britain's help. Voting the concession is the last duty of the present Parliament, new elections taking place in November.

SHELL CO. VIEW OF CALIFORNIA

"I expect the peak of California production to be reached the latter part of this month," says G. Leigh-Jones, president of the Shell Co. of California, subsidiary of Royal Dutch. "There has been a great deal of shutting in in the California fields to take care of production when it begins to fall off. There has been so much shutting in that it is a bit difficult to tell exactly when the peak will be reached. But it has not been reached so far. I do not look for any immediate change in price even when the peak is reached, because of the large amount of surplus oil that has been put upon the market."

ALMA GAS PIPE LINE

LITTLE ROCK, Ark., Oct. 22.—The Industrial Oil & Gas Co. of Fort Smith, Ark., has completed a section of new 8-inch pipe line between the Alma gas field and Fort Smith. This company recently laid a 6-inch line over the Fort Smith-Van Buren bridge. The La Salle Oil & Gas Co. is completing an 8-inch line from the Alma Field to a connection with a 10-inch Clear Creek main from the Williams gas field to Van Buren and Fort Smith. The Industrial company serves only industrial consumers, while the La Salle and Clear Creek companies serve domestic consumers through the Fort Smith Light & Traction Co. distributing system.

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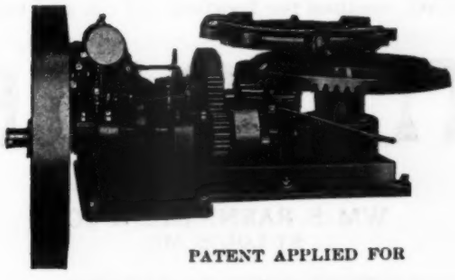

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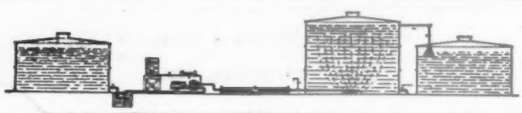

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Texas Congressman Asks Daugherty to Investigate Gasoline

WASHINGTON, Oct. 20.—A Federal investigation through the Department of Justice of the gasoline rates prevailing in Texas was asked in a letter to Attorney General Harry M. Daugherty from Congressman Tom Connally of Marlin, Texas, representative from the Eleventh district. A similar request was made by Mr. Connally in a letter to Henry Zwiefel, United States atttorney for the Northern District of Texas, some time ago.

In his letter to Mr. Daugherty, Representative Connally points out the wide variance of prices on gasoline in the same general locality of the State and that it was entirely unreasonable to assume that the price of the commodity had been artificially influenced, and that the natural laws of trade have been violated. Mr. Connally's letter follows:

"My dear General Daugherty:

"During the last several months gasoline has been selling in Texas at widely differing price in different localities. The margin of difference in prices cannot be attributed to transportation cost or cost of distribution. The difference is too great for that.

Prices at Marlin

"Within my own knowledge gasoline was selling at Marlin, Texas, for 20 cents a gallon and later 19 cents a gallon, while the same article was selling at Waco, Texas, from 11 cents to 13 cents per gallon. The distance between these points is only 28 miles, with daily rail and truck communications. My information is to the effect that at the same time these prices prevailed as above set out, gasoline was selling at even lower figures at Dallas and other North Texas points.

"If 19 cents or 20 cents is more than gasoline is worth on the market, then there must be some form of agreement or understanding among the companies to hold up the price.. On the other hand, if 11 cents or other minimum price at which gas has been sold is below the cost of production, as is claimed, the sale at such a price must be the result of an effort on the part of some companies to drive out competing companies.

Two Claims Made

"On the one hand, it is charged that the gasoline war was brought about by local distributors and pushed by local rivalry only. Another claim is that the objects of the great reduction in price is to drive out the independent oil companies.

"In any event, it seems entirely reasonable to assume that the price of gasoline has been artificially influenced, and that the natural laws of trade have been violated.

"I most respectfully call your attention to this situation and request that the Department of Justice investigate the situation at various points in the State of Texas while the transactions are still fresh and evidence can be obtained, or at other places where competition is being driven out by ruinous prices in order that the public may be later exploited."

STATE LAND LEASES OFFERED

OKLAHOMA CITY, Okla., Oct. 22.—Eleven tracts of State land are to be offered for lease for oil and gas purposes by the Commissioners of the Land Office on November 13. Three of these are in Section 36-25n-2w, Kay County, near production. Four are in Section 16-14n-5e, near the new Stroud Field. The others are in Section 36-20n-7e, Pawnee County, where some deep tests are promised.

JAPAN'S PETROLEUM IMPORTS

Japan imported gasoline valued at $2,435,300 in the first six months of 1923, a decline of $339,570 from the 1922 period. Other oil imports were valued at 3 037,020, a decrease of $1,608,180 from 1922 period.

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LACKING DEVELOPMENTS HAVE TO IMPORT OIL

Though both Columbia and Venezuela have large potential oil resources, owing to limited exploitation they still depend for a portion of their refined oil requirements on imports from the United States, according to Commerce Reports. In 1922, 200,000 gallons of gasoline, 600,000 gallons of kerosene, 263,000 gallons of lubricating oils and over 2,500,000 pounds of paraffin wax were imported from the United States by Colombia. Completion of Colombian refineries has reduced imports of gasoline and kerosene, but more lubricants and paraffin wax are being imported.

Venezuela's only refinery, that of Caribbean Petroleum Co. at San Lorenzo, supplies more than half the gasoline consumed. Kerosene imports from the United States have declined to about 300,000 gallons a year, compared with 1,500,000 gallons in 1913. Lubricating oil imports from the United States approximate 200,000 gallons annually.

PIONEER IN MEXICO DEAD

TAMPICO, Mex., Oct. 20.—"Uncle Ed" Williams, aged 65 years, dean of the American colony in Tampico, and a resident of the Republic for the past 35 years, was fatally injured by an automobile in Mexico City last week. His remains were shipped from the capital to his home in Corpus Christi, Texas, for interment. Mr. Williams is survived by one daughter. "Uncle Ed" came to Tampico from the interior in 1911, and taking a lease in the Panuco Field, drilled a small well there. He disposed of this lease shortly afterwards to the Royal Dutch Shell interests, through Doctor Erb, in person. This was the first lease the Royal Dutch took in Mexico. The property continues in the production column. Mr. Williams was a vice president and director of the Tampico Banking Co., headed a large realty company, and was otherwise prominently identified with Tampico affairs.

TURKS REFUSE EXTENSION

The Turkish authorities have declined to assent to the request of Colonel E. Clayton-Kennedy, representing the Ottoman-American Development Co., for an extension of the time limit in taking up the option on the Chester concession.

Colonel Kennedy therefore has declared his readiness to begin work on the stipulated date, November 9, on the Samon-Sivas Railway.

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Him into his trade.

No matter what kind of oil pump it may be,
He knows all about it, from A down to Z.
An' if it needs fixin,—well, fix it he can. can.
He's some trouble fixer—the oil-pumpin' man.

He's always a-bustle,
With "ginger" an' "snap,"
To keep the pumps pumpin'
An' out of the "scrap."
He turns his wise eyes on 'em,
Grins a broad grin;
You bet he is wise to 'em—
Outside an' in.

No matter what's ailin' 'em, that fellow, he
Can fix it, whatever the trouble may be.
He's some little fixer—if anyone can
Make good on a job, it's the oil-pumpin' man.

—James E. Hungerford.

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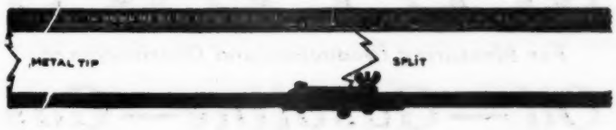

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Largest Steel Tank Being Constructed In California Field

The Associated Oil Co. has recently contracted for the erection of six oil tanks at its Watson tank farm, of a capacity of 178,000 bbls. each. These tanks, which are believed to be the largest steel storage tanks ever built for oil, are being erected by the Western Pipe & Steel Co., which company designed them in conjunction with the engineering department of the Associated Oil Co.

On account of size of plates and rivets used in their erection, writes L. D. Jurs, chief engineer, Associated Oil Co., in the California Mining and Oil Bulletin, these tanks required a departure from standard field equipment, in that large yoke riveters were used for driving rivets instead of the ordinary hand riveter.

There has been a gradual increase, over a number of years, in the size of tanks. Up to the present time it has been thought that the size giving the most economical cost per barrel was the standard 80,000-bbl. tank, which has almost replaced the formerly used 55,000-bbl. tanks.

These larger tanks are 175 feet, 9 inches diameter by 42 feet high and are fitted with a flat $\frac{3}{16}$-inch steel top, depressed 6 inches to form a water seal. Some idea of the amount of steel used can be observed by the following comparisons:

Approximate weight of 80,000-bbl. tank, 300 tons.

Approximate weight of 178,000-bbl. tank, 720 tons.

Eighty-thousand-bbl. tank has a first ring thickness of $\frac{5}{8}$-inch, double butt strap, quadruple riveted;

One hundred seventy-eight thousand-bbl. tank has a first ring thickness of 1-inch, double butt strap, sextuple riveted.

The 80,000-bbl. tank covers an area of .247 acres.

The 178,000-bbl. tank covers an area of .556 acres.

The phenomenal increase in oil production in the vicinity of Los Angeles during the past year necessitated the rapid building of immense quantities of storage for surplus oil, and, for economical reasons, this storage should be built at points close to pipe lines. Available lands in large areas were quickly acquired, and there was a correspondingly rapid increase in prices, beyond the range of potential value.

To meet these conditions, the oil companies are required to increase the amount of storage per acre, and in some cases this has been done by the building of immense earthen reservoirs lined with concrete. In the building of reservoirs of this character, selected ground, with the proper proportion of clay is required, and such land is not always available.

The primary reasons for the Associated Oil Co. building this size of tank were the lack of sufficient ground space, and inability to purchase additional space at the points where this storage was needed. Also, considering that the development in recent years of oil storage tanks with gas-tight and water-top roofs has practically eliminated the fire hazard of the old wood-roof tanks, the construction of larger tanks was simply a matter of engineering science, and the size of the tanks is limited only by considerations of economy of construction and by the ability to obtain plates of the thickness required.

While undoubtedly under the present construction practice, the 80,000-bbl. tank is about the limit of economical cost per barrel, the comparison in this case being 6 cents per barrel additional increase on the larger tank, yet, when we consider the proper spacing of tanks from shell to shell for safety against fire, and the value of land in this vicinity, it will be found that there is approximately 55 per cent more land required for the 80,000-bbl. tanks than for the larger size. Therefore, taking into consideration the

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value of levees, grading, pipe connections and other factors entering into the construction of a tank farm, it is evident that with approximately 50 per cent more storage on available area, the actual cost per barrel for the larger tanks is slightly less than would have been the case if land were available for equivalent storage in tanks of 80,000-bbl. capacity.

RED RIVER AGREEMENT IS AGAIN REPORTED

OKLAHOMA CITY, Okla., Oct. 22.—A conference held recently in Washington between Arthur Kidder of that city and Arthur Stiles, chief of the Reclamation Service of Texas, with reference to the recent boundary survey work on Red River, is said to have resulted in a substantial agreement having been reached by these men in the matter of locating the line along certain land bulges in the Burkburnett district. Mr. Stiles is having new lines run preparatory to submitting his report to the United States supreme court.

These engineers, who constitute an Oklahoma-Texas boundary commission appointed by the supreme court, disagreed over where a line should be placed as the south boundary of the stream in places where the present water line is farther out in the stream than when some previous surveys were made.

E. M. Lumsden, chief of a corps of State engineers that spent the summer working along the north side of the river and observing the work being done by the boundary commission, has gone to Washington to approve the complete report of Engineer Kidder. He went as representative of the Commissioners of the Land Office and his approval will be that of the Commissioners.

As proof of the correctness of the Kidder line, as Oklahoma views it, Mr. Lumsden took photographs showing that water in Red River recently rose beyond the Kidder stakes and washed some of them away. Mr. Stiles had contended that the stakes were set considerably back on Texas soil.

CARBON BLACK IN COAL COUNTY

OKLAHOMA CITY, Okla., Oct. 22.—Another effort is being made to utilize natural gas produced in Coal County in the manufacture of carbon black. An application for a permit a few months ago was denied by the Corporation Commission. An application was made recently by F. E. Shryock and O. W. Terrell, who say they have eight gas wells in Coal County, each producing about 2,500,000 feet a day, and no market for the gas. The nearest line of the Oklahoma Natural Gas Co. is 30 miles away and that company refuses to contract for a production of less than 70,000,000 feet a day. The application says that for the manufacture of carbon black 3,000,000 to 4,500,000 feet per day will be required. The Commission named October 18 as the date for a hearing.

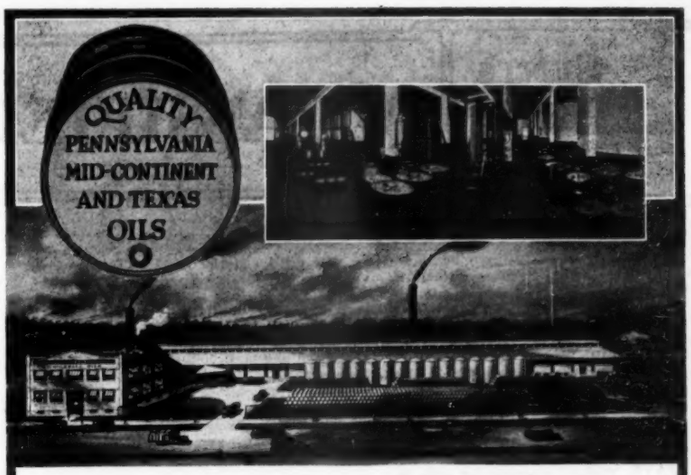
TURN REPORTED BY STEEL MILLS

(Continued from Page 72)

are well employed, however, as there is heavy pressure for deliveries of full weight or merchant pipe. How long this pressure will continue cannot be predicted. At the moment shipments of merchant pipe are much heavier than bookings.

Oil tank buying is light at the moment. The Producers & Refiners Corp. has ordered two 55,000-bbl. oil storage tanks, requiring 600 tons of plates.

Tin plate mills are operating a trifle better, with improved labor supply, and output is the largest since last May, running close to 800,000 boxes a week. Production this quarter may exceed that of any of the other three quarters of the year, which would be unusual, as the fourth quarter is usually the dullest period of the year in tin plate manufacture. The mills seem to be comfortably filled with orders to the end of the year



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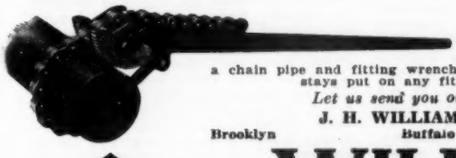

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FOR SALE—Seminole County, Oklahoma, farms; oil leases; royalties. C. B. Hyde, Mercantile Bldg., Oklahoma City, Okla.

FOR SALE—At bargain prices, oil and gas leases, production and royalties in the Kentucky shallow fields. For full particulars and maps, address W. P. Harley, Bowling Green, Ky.

I HAVE wildcat acreage for sale in vicinity of well located by the same geologist who discovered the Sayre oil field and recommended by him to be as safe an investment as the Sayre Field. I can sell for $2 per acre and up. Dr. W. R. German, Canadian, Texas.

FOR SALE—Oil and gas leases in Cumberland, Monroe and Metcalfe Counties, Kentucky. F. L. James, Edmonton, Ky.

$1.00 PER ACRE for 1,000 or 5,000 acres in the Panhandle of Texas on surveyed structure. Well drilling to prove this territory. No rental due till 1926. A snap for someone. If interested, write and will forward printed geologist's report and map. 300 Alworth Bldg., Duluth, Minn.

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OIL FIELD LEGAL BLANKS—Fifteen years' specializing in blank forms. Royalty, deeds, leases, plats, gauge books, releases, well logs, field time books, gasoline plant reports; stock certificates, corporate and common law. Catalog on request. Burkhart Printing & Stationery Co., Tulsa, Okla.

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OFFER subject to prior sale, 25,000 feet S. H. 12-inch line pipe, recessed couplings, good threads, weight 51-lbs. at $1 per foot, subject to inspection while loading, f. o. b. Indiana.

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BEAUTIFUL SETTER PUPS by the winner, High Speed Ben by Betty Momomey she by Momomey, II; coming three months old; $35 either sex; all papers; satisfaction guaranteed. J. H. Armstrong, Vaiden, Miss.

ENGLISH Setters from individual shooting stock; all papers furnished; I guarantee them to please you. Hugh Stone, Houston, Mo.

FOR SALE—English Setters; one broke, four six-months'-old pups; worked some; papers furnished; also pointer. Fred Tucker, Sheldon, Mo.

HELP WANTED

WANTED—A man experienced in heat treating Rotary tool joints. Must have had experience with high grade manufacturer. Write Box 220, The Oil and Gas Journal, Tulsa, Okla.

SIDE LINE SALESMAN calling on auto accessory dealers, write us for side line that sells. The Jenkins Co., Thomasville, Ga.

WANTED

PRODUCTION Wanted—50 to 500 barrels settled. No brokers. Strictly confidential. Give full particulars. Operator, Box 388, Independence, Kans.

WANTED PRODUCTION—I have $25,000 cash and a 1,500-acre ranch located in Central Texas that I will trade for a good producing lease in Oklahoma, Texas, or Louisiana. This land is open prairie, well grassed and well watered. Small loan at 7 per cent. This land is worth what I ask and I will not consider inflated values or salt water leases. Address Box 236, Clifton, Texas.

WANTED—Labor contract to drill wells to 800 feet. Have good machine and several years' experience in oil field work. Can start 10-inch hole. A. R. Needy, Butler, Okla.

WANTED—Responsible company to drill on acreage near Mexia, East Central Texas. G. M. Schoemann, 5537 Waterman Ave., St. Louis, Mo.

STOREHOUSE OF INFORMATION

The Oil and Gas Journal contains statistics and unlimited information that is most valuable to the oil and gas man. Calls for back numbers are so numerous we are unable at all times to supply the demand—in fact, we can furnish very few back numbers. The issues missing from our files may be the ones you want. To make it possible for you, at all times, to refer to special articles or other information you desire, we have secured binders specially designed and durable and attractive in appearance that hold 26 numbers, or six months' issues. They are for sale at actual cost to us.

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DRILLING PROPOSITION WANTED—Three experienced men in geological and development work are open for proposition of any kind up to pipe line delivery or will put time and experience against capital in organizing company in territory standing geological examination or will take drilling proposition on percentage basis anywhere. Write Box 303, The Oil and Gas Journal, Tulsa, Okla.

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SOUTHEAST MISSOURI COTTON LAND FOR SALE

We want to sell outright or organize a development company for handling our 5,400 acres of cutover land. We are clearing the land now and building houses and improving as fast as we can. Good crops this year. Location on State Highway, 2 miles from Kennett, county seat, Dunkin County, the banner cotton county of the State.

Write us if interested in buying cotton land or taking stock in development company.

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Kennett, Mo.

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Is this going to happen and you not know it? It may, for there's wells drilling preparations being made in other localities and the whole country is being geologized. Here's an opportunity to post yourself.

After three years' study of geological conditions bearing on the possibilities of oil and gas deposits in South Dakota, the writer has compiled in the form of a bulletin, a most exhaustive geological report on South Dakota's Great Potential Oil and Gas Fields. Included is a geological map, a geological column and information on 40 structures. Also a report by Chas. T. Lupton, E. W. Shaw and T. P. McDonald—all men of high geological authority.

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547 Gibralter Bldg.,
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BROKERS desiring to handle leases in new producing oil field write me. Address Box 534, Roswell, New Mexico.

SALESMAN and organizer will raise $10,000 to $50,000 for business venture or venture that promises a worth-while future. Address P. O. Box 457, Chicago.

BUSINESS OPPORTUNITY

COMMON LAW COMPANIES—Organize under Declaration of Trust; many advantages; legal everywhere; managed by trustees; limited liability. No State organization fees, reports or franchise tax. Meet or do business anywhere. Better than a corporation or partnership. Booklet free. Modern Organization Co., 304 South Broadway, Los Angeles, Calif.

WOULD YOU invest $50 with hopes of making $500 profit? Write for proof of financial independence. Address Messinger, 1012 Chronicle Bldg., San Francisco, Calif.

Refiners needing expert advice on acid plants and all sludges, address Box 403, The Oil and Gas Journal, Tulsa, Okla.

LEASES—

Inquiries about leases, tools, machinery, acreage, production and royalties are constantly coming to the Classified Section. The good advertisements on the Classified Pages make it easy for us to answer these inquiries.

November 3 is our next free trip to 40-acre buyers; in heart of fruit and truck belt. Hickman Land Co., 408 Olive St., St. Louis, Mo.

CAPITAL supplied, manufacturing, oil and other legitimate business, through sale of securities on reasonable commission. House established 30 years. Wiers, 115 Broadway, New York.

RARE OPPORTUNITY
PRODUCTION ALREADY ACQUIRED

For sale at a bargain, a one-twelfth interest in the Harmony Oil & Gas Trust. This trust holds a one-half interest in a large lease in the Tidioute Pool. Two wells on this lease with an open flow of approximately 13,000,000 cubic feet of gas daily. Rock pressure 500 pounds. Gas wells in Queen sand, two miles away still big producers after 40 years. If only one-fourth of the open flow were sold at price offered for the gas this one-twelfth interest should net the owner between $9,000 and $10,000 a year. Contract for sale of gas will probably be closed within the near future. Room for many more wells on what appears proven territory. J. C. Sibley, Jr., 15 Hancock bldg., Franklin, Pa. Bell phone 227; Pet. 'phone 421-X.

GOOD OPPORTUNITY for man with rig; 312 acres; more than can be leased; good layout to right man. L. M. Roe, Calico Rock, Ark.

I HAVE wildcat acreage, highly recommended by competent geologist, in vicinity of wells being drilled. Wells spudded in and locations blocked for drilling. I will sell for $2 per acre and up. I might furnish a 10,000-acre block for a drilling contract. W. R. German, Canadian, Texas.

HOMESEEKER—1,280 acres, 450 cultivated; six sets improvements; all rich valley; price $35 per acre. Toler Bros., Nettleton, Ark.

OIL STORAGE FINANCED—An organization is being perfected to supply steel storage tanks to producers in Mid-Continent Field to be paid for when oil is run. An opportunity to producers to store crude oil and take advantage of later advances in price. Cannot consider under 25,000 barrels per tank. Address P. O. Box 1071, Kansas City, Mo.

INTERNATIONAL Financial Service. Entire issues approved. Stocks, bonds sold. Box 471, Oklahoma City.

POSITION WANTED

ELECTRIC WELDING engineer desires to conect with reliable refining or producing company. Eleven years experience; will give best of references. Write J. E. McLausson, 3120 E. Fifth St., Tulsa, Okla.

The Journal has a wide circulation, going to all the oil fields, refineries, pipe line stations, gasoline plants, supply houses and business offices. It thoroughly covers the industry.

POSITION WANTED

REFINERY SUPERINTENDENT—desires connection with some responsible concern, has had 30 years' experience in refining, pipe line and marketing; thoroughly familiar with lub plants; will go anywhere. Address Refiner, care The Oil and Gas Journal.

A major company land man, with geological and engineering experience desires connection with private capital or organization on basis of salary and interest operating in Texas, Arkansas and Louisiana. Have several good drilling blocks on structure. Write Box 405, The Oil and Gas Journal, Tulsa, Okla.

WANTED—To hear from producers and land owners having productive properties where "floating" sands, etc., make it impracticable to pump wells. Object: To tell you how to overcome this trouble. Give depth of wells, production, and gravity. Write Box 404, The Oil and Gas Journal, Tulsa, Okla.

LETTERHEADS-PRINTING

QUALITY PRINTING—1,000 letterheads, envelopes, statements or cards, $3; 200 notesheets and 100 envelopes with name and address, $1. Samples free. Howlett's, Paris, Ill.

Automobile Highways Not More Railroads Suggested for Japan

Before the earthquake there were about 12,500 licensed automobiles in Japan, of which 5,700 were credited to Tokyo, a city of 3,000,000. Hundreds and perhaps thousands of automobiles were destroyed but Japan can hardly in its present condition absorb as many cars as a city of 100,000 in the United States. Physical, financial and other difficulties limits the market.

Not only in the cities but throughout the country the lane-like streets will not permit the use of an automobile, with the exception of a few short runs. In 1919 a national road law was promulgated, and some progress has been made. According to the Government there are 6,000 miles of national roads, 25,000 miles of perfectural and 275,000 miles of other roads. But they were built to accommodate the native narrow carts. Few stretches are accessible to automobiles. The 1919 road program contemplated the expenditure of $314,400,000.

Would Build Roads

Yoshi Kinoshita, former director of the traffic bureau of the Government railways, says facilities for automobiles should be provided instead of building more railroads. Hindrances he would remove or modify include the absence of roads; heavy traffic on cars and gasoline; lack of development of the automobile industry at home, and heavy taxes. Import tariff on car with body is 35 per cent ad valorem, on chassis and parts 25 per cent. Annual taxes range from $64 for 5-horsepower or less to $342 for 20-horsepower or more.

Gasoline is selling for 50 cents gold a gallon. Exclusive of "squeeze," a Ford touring car costs $915 and a Buick-4, $1,800. The Ford Motor Co. assembling plant at Negishi turns out only about seven cars a day. More than 75 per cent of all cars sold in Japan are Fords.

Wealth in Few Hands

An unwritten law seems to require private car owners to employ chauffeurs. They need not drive the car on all occasions, but must accompany it. A prospective purchaser of a car may carry negotiations only to a certain point; then the transaction is turned over to his chauffeur, who must get a piece of graft. This "squeeze" ranges from 600 to 1,000 yen, ($300 to $500), on each car. It is added to the price and the purchaser submits to keep his car from being ruined by the driver.

Wealth in Japan is concentrated in the hands of comparatively few. It will be many a day before the teeming millions that comprise the bulk of the population can afford automobiles. There is a disposition to protect the jinriksha men by putting taxes and other impediments in the way of automobiles in the larger cities. Thousands of licensed runners, if automobiles should come into general use, would be thrown out of employment. Jinriksha fares have more than doubled since the pre-war period but this method of transportation remain universal. It is the only kind adapted to the streets.

PIPE LINE INVESTMENTS

The following figures are from the Bureau of Statistics of the Interstate Commerce Commission selected from the annual reports of pipe line companies for the year ended December 31, 1922: Miles of line operated, 57,348.93; investment in pipe lines, $382,279,508; other investments, $264,343,603; pipe line operating revenues, $128,059,803; pipe line operating expenses, $64,539,459; pipe line operating income, $52,719,665; net income, $58,567,686; amount dividends declared, $57,120,732.

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tions; doing a nice business. Home Oil Co., Hugo, Okla.

k. w. generator for $2,000. C. A. Runyon, Barnsdall, Okla.

TULSA, OKLA.

Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR AUGUST

	Runs	
*Prairie Pipe Line Co.	2,480,000	80,000
Gulf Pipe Line Co.	1,490 850	48,092
Texas Pipe Line Co. of Okla.	581,780	18,767
Magnolia Pet. Co.	862,672	27,828
Empire Pipe Line Co.	781,817	25,220
Cosden Pipe Line Co.	513,826	16,576
Sinclair Pipe Line Co.	1,024,720	33,056
*Other lines	7,750,000	250,000
Total August	15,485,665	499,538
Total July	16,955 596	546,954
Difference	1,469,931	47,416
Shipments		
†Prairie Pipe Line Co.	3,536,928	114,094
Gulf Pipe Line Co.	1,201,730	38,765
Texas Pipe Line Co. of Okla.	376,611	12,149
Magnolia Petroleum Co.	727,332	23,462
Empire Pipe Line Co.	805,467	25,982
Cosden Pipe Line Co.	278,376	8,980
†Sinclair Pipe Line Co.	1,074,154	34,650
*Other lines	7,444,000	240,000
Total August	15,444,598	498,082
Total July	17,057 623	549,746
Difference	1,613,025	51,664
Stocks		
*Prairie Oil & Gas Co.		23,000,000
*Prairie Pipe Line Co.		1,350,000
Gypsy Oil Co. and Gulf P. L. Co.		8,861,285
The Texas Co.		7 679,842
Magnolia Petroleum Co.		7,512,366
Empire Pipe Line Co.		2,869,178
Cosden Pipe Line Co.		2,863,542
*Sinclair Crude Oil Pur. Co.		30,725,000
Carter Oil Co.		15,796,475
Other lines		3,600,000
Total August		104,257,688
Total July		102,351,598
Difference		1,906,090

*Estimated. †Includes shipments of Texas crude oil.

Stocks do not include approximately 5,850,000 bbls. held in storage on private tank farms and leases.

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1920	1921	1922	1923
January	56,004	64,460	67,702	75,790
February	68 699	70,054	75,096	71,093
March	67,745	68,555	78,531	76,592
April	64,589	65,036	75,462	75,614
May	63,937	65,466	77,592	77,365
June	68,750	62,438	76,193	77,592
July	66,489	59,486	76,435	71 879
August	63,861	64,888	79,387	76,910
September	68,102	60,110	78,512	72,358
October	65,066	57,688	77,209	.....
November	62,753	58,470	75,313	.....
December	60,875	61,000	73 351	.....

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1920	1921	1922	1923
January	98,835	115,550	119,792	171,067
February	107,146	96,736	111,362	164,219
March	110,777	84,168	127,753	185,487
April	114,090	101,015	127,068	179,751
May	110 219	100,252	127,840	177,102
June	102,598	105,037	137,638	173,598
July	112,340	97,096	137,872	168,330
August	122,296	101,652	153,275	142,766
September	127,131	117,440	158,761	137,266
October	122,891	105,728	165,345	.....
November	117 730	121,803	166,677	.....
December	117,201	104,023	172,861	.....

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines, at the close of each month for the past three years:

	1921	1922	1923
January	7,916,353	16,297,858	14,040,567
February	8,721,878	17,009,293	14,028,437
March	9,818 766	16,877,937	13,873,146
April	10,369,941	16,777,842	13,737,575
May	11,224,694	16,948,962	13,815,622
June	12,328,126	16,810,169	14,541,253
July	13 798,698	16,669,286	14,645,584
August	15,155,633	16,235,229	14,770,539
September	15,525,750	16,228,545	14,803,444
October	15,761,079	15,757,746	.....
November	14,971,071	15,171 972	.....
December	15,854,741	14,323,765	.....

Franklin Pipe Line Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

1922—	Receipts	Shipments	Stocks
September	2,382,56	3.31	29,728.16
October	3,368.58	4,783.61	29,313.13
November	3,052.76	2,230.18	30,135.70
December	3,076.36	1,392.84	31,919.22
1923—			
January	2,798.55	2 461.36	32,256.41
February	2,692.93	932.33	34,017.01
March	2,978.88	12,417.00	24,578.89
April	3,529.12	3,054.09	25,053.92
May	3,538.73	4,856.42	23,736.23
June	2,927.71	4,743.78	21,920 16
July	2,996.64	1,471.57	23,445.23
August	3,199.07	3 769.34	22,874.96
September	2,829.70	5,822.38	19,882.37

The Illinois Field

The following table gives the report of the Illinois Pipe Line Co. in Illinois:

Gross stocks, October 1	2,514,418.31
Runs from well	514,355.38
Other receipts	89,975.51
Regular deliveries	181,647.39
Other deliveries	247,488.89

The amount of Illinois oil run by the Tide Water Pipe Line Co. in September was 28,206.21 barrels, and deliveries were 124,278.01 barrels. Adding these figures to those of the Illinois Pipe Line Co., makes the runs and deliveries from the Illinois Field as follows:

1922—	Runs	Deliveries
September	595,603.99	407,333.79
October	618,459.82	454,005.38
November	566 508.03	434,681.97
December	552,069.33	391,868 37
1923—		
January	599,239.86	470,958.84
February	496,421.79	382,566.83
March	625,006.81	472,920.76
April	521,910.87	423,548 43
May	624,107.98	523,515.00
June	582,511.82	509,137.77
July	594,653.42	489,269.17
August	594,747.94	367,162.82
September	542,561.59	306 925.40

The Tide Water Pipe Co., Ltd., also delivered in September 146,980.99 barrels of Oklahoma oil. The total deliveries of all grades by the Tide Water were 451,871.43 barrels.

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., '23	Sept., '23
Nat. Transit	206,573.94	188,712.66
S. W. Pa. P. L.	85,306.54	82,300.00
Eureka P. L.	410,033.87	368,672.93
Buckeye P. L. (Macksburg)	275,646.49	250 485.71
Buckeye P. L. (Cleveland)	19,886.44	16,280.77
Buckeye P. L. (Lima, etc.)	147,758.37	139,388.04
Indiana P. L.	16,666.55	14,150.22
Cumberland P. L.	436,995.56	386,752.33
N. Y. Transit	16,733 74	15,261.47
Tide Water P. L.	166,005.41	149,139.68
Pure Oil P. L.	191,968.03	177,281.66
Emery P. L.	34,090.37	31,486.08
Paragon Ref.	.....	.....
Indian Ref.	327 828.64	309,242.57
Swiss P. L.	1,118.94	995.34
Pittsburgh P. L.	9,462.70	8,272.29
Riggs Ref.	6,694.44	.....
Paragon Dev.	31,436.65	32,320.51
Total	2,384,206.70	2,170,742.30
Daily average	76,909.89	72,358.08

Note—Indian Refining Co. also reported other receipts of 87,686.98 bbls. Paragon Refining Co. had other receipts of 133,819.93 bbls. Paragon Development Co. had other receipts of 4,408.53 bbls. Pittsburgh Pipe Line had other receipts of 6,278.76.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for August and September:

	Aug., '23	Sept., '23
Nat. Transit	408,858.25	412,333.27
S. W. Pa. P. L.	294.045.52	261,116.40
Eureka P. L.	118,242.13	130,178.48
Buckeye P. L. (Macksburg)	80,467.88	86,995.31
Buckeye P. L. (Cleveland)	1,819.19	1 060.31
Buckeye P. L. (Lima, etc.)	684,924.31	693,616.91
Indiana P. L.	992,697.13	924,580.09
Cumberland P. L.	170,405.72	160,116.97
Southern P. L.	.....	.....
Crescent P. L.	93,932.06	78,331.36
N. Y. Transit	476,987.89	358,930.97
Northern P. L.	51,021.80	49,794.27
Tide Water P. L.	197,667.70	180,612.43
Pure Oil P. L.	181.150.48	173,186.22
Emery P. L.	35,794.81	31 492.36
Paragon Ref.	163,638 92	114,947.34
Indian Ref.	435,606.11	294 744.15
Swiss P. L.	.....	1,933.91
Pittsburgh P. L.	10,234.76	1,[illegible].05
Riggs Ref.	.....	.....
Paragon Dev.	38,266.83	37,152.27
Total	4,425 745.48	4,017,972.79
Daily average	142,766.98	137,306.76

Gross Stocks

The gross stocks held by various pipe lines in the oil producing section of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky at the close of August and September were as follows:

	Aug., '23	Sept., '23
Nat. Transit	1,226,516.82	1,197,343.30
S. W. Pa. P. L.	905,483.30	924,122.30
Eureka P. L.	1,881,858.68	1,934,234.44
Buckeye P. L. (Macksburg)	510,371.43	492,970.70
Buckeye P. L. (Cleveland)	14,727.36	12,414.25
Buckeye P. L. (Lima, etc.)	4,054 312.99	4,214,997.63
Indiana P. L.	612,562.53	681,376.15
Cumberland P. L.	729,182.50	732,274.03
Southern P. L.	980,531.42	959,768.25
Crescent P. L.	73,288.05	78,602.29
N. Y. Transit	2,066,346.44	1,739,873.71
Tide Water P. L.	.....	.....
Northern P. L.	930,881.22	930,869.95
Pure Oil P. L.	288,500.40	282,902.25
Emery P. L.	5,560 54	5 811.25
Paragon Ref.	167,423.59	150,341.46
Indian Ref.	502,234.45	490,841.70
Swiss P. L. Co.	2,363.81	4,482.75
Pittsburgh P. L.	5,866.37	9,171.35
Riggs Ref.	1,141.90	.....
Paragon Dev.	10,384.64	11,121.59
Total	14,770,538.60	14,803,443.87
Increase	124,955.06	32,905.27

Grades of Oil

The following table shows the amount of the different grades of oil held by the eastern pipe lines at the close of August and September, showing the gross stocks of the above fields:

	Aug., '23	Sept., '23
Pennsylvania	3 639,614.20	3,601,488.55
Lima	844,117.73	888,202.61
Kentucky	1,978,779.72	1,998,576.17
Mid-Continent	8,058,066.66	7,951,689.73
Illinois	249,960.29	363,186.73
Total	14,770,538.60	14,803,443.87

AVERAGE WEEKLY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF PORTS

	Atlantic Ports						Gulf Coast Ports					
Av. Bbls. per Week	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
May	114,666	72,000	312,500	191,000	321,333	1,011,499	.....	100,000	98,000	.....	198,000	1,209,499
June	164,200	32,000	641,200	165,200	161,600	1,164,300	.....	132,800	.....	.....	132,800	1,297,000
July	110,750	18,750	517,000	185,250	121,750	953,500	.....	138,760	.....	.....	138,760	1,092,260
August	116,067	51,709	688,485	222,873	151,970	1,231,104	.....	24,612	219,030	.....	243,642	1,474,746

AVERAGE WEEKLY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

	Atlantic Ports						Gulf Coast Ports					
Av. Bbls. per Week	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Pt. Arthur Sabine Pass	Tampa	Total	Total All Ports
March	132,500	102,000	404,027	169,400	281,315	1,088,442	271,400	322,258	290,600	60,000	1,044,258	2,132,700
April	123,233	167,250	268,500	161,250	118,200	838,434	538,750	255,000	282,750	56,000	1,132,500	1,970,934
May	114,665	128,750	256,500	109,250	153,750	862,915	335,250	327,500	295,500	68,500	1,026,750	1,889,665
June	62,800	84,200	258,200	153,400	161,800	757,600	301,000	228,400	212,400	45,800	787,600	1,545,200
July	71,750	116,250	451,500	112,000	218,750	970,250	367,750	280,000	208,250	23,000	879,000	2,175,613
August	116,065	89,113	374,613	102,970	197,127	879,888	338,485	266,224	234 388	46,633	1,295,730	

PRODUCTION BY MONTHS AND DAILY AVERAGE PRODUCTION IN THE U. S. FOR 12 MONTHS

		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Wyoming Montana	Other Fields	Totals
1922—										
September:	Month	13,205,146	13,599,520	8,830 920	2,360,235	688,740	2,796,180	2,447,310	3,438,240	45,366,194
	Daily average	406,833	419,984	294,364	84,296	22,958	93,206	81,577	114,608	1,513,299
October:	Month	13,419,432	13,322,151	9,106,994	2,638,875	780,797	2,782,994	2,856,805	3,550,182	48,358,230
	Daily average	432,885	426 521	293,774	85 125	25.187	89,774	93,155	114,522	1,560,943
November:	Month	14,035,537	12,612,560	8,676,000	2,646,091	1,033,450	2,529,150	2,903,800	3,205,290	47,637,878
	Daily average	467,318	420,452	289,200	88,261	34.115	84,305	96,980	106,843	1,587,929
December:	Month	15,436,810	13,185,416	8,707,931	2,649,900	1,596,500	2,468,391	3,108,846	3,149,445	50,288,150
	Daily average	497,639	425,336	280,901	85,320	51,500	79,461	100,256	101,595	1,622,199
1923—										
January:	Month	16,457,445	13,328,574	8,681,004	2,826,611	2,217,902	2,428,013	3,124,707	3,428,518	53,786,873
	Daily average	530,885	426,917	286,484	91,181	74,742	78,333	100,797	110,436	1,703,903
February:	Month	16,436,759	13,045,030	7,663,993	2,746,660	2,258,984	1,984,008	2,922,193	2,907,340	48,065,966
	Daily average	586,670	444,465	273,714	91,633	80,678	67,286	104,364	104,405	1,716,200
March:	Month	19,608,193	13,955,838	8,462,782	2,847,040	2,970,575	2,312,600	3,274,778	3,444,529	56,896,325
	Daily average	632,525	450,188	273,993	91,840	96,535	74,600	105,638	111,759	1,835,995
April:	Month	20,695,959	14,499,610	8,403,240	2,768,052	2,766,000	2,160,300	3,584,048	3,281,340	58,958,549
	Daily average	689,865	479,987	280,108	89,393	92,200	72,010	116,947	109,378	1,938,398
May:	Month	21,535,365	15,658,782	8,922,000	2,805,750	3,389,000	2,175,000	3,566,800	3,546,400	61,608,897
	Daily average	694,689	505,122	288,129	93,535	109,323	70,161	115,051	114,400	1,987,383
June:	Month	22,667,106	15,572,720	8,817,000	2,797,830	3,078,990	1,981,800	3,385,600	3,401,400	61,702,456
	Daily average	755,570	519,091	293,900	93,261	102,633	66,066	123,853	113,380	2,056,754
July:	Month	25,262,082	15,260,184	10,662,000	2,448,566	3,859,000	2,012,000	4,143,400	2,788,600	66,435,832
	Daily average	814,906	492,264	343,935	78,986	92,226	64,903	133,657	89,955	2,110,833
August:	Month	26,440,005	14,049,076	11,454,000	2,316,320	3,113,000	2,078,000	4,180,000	3,472 300	67,102,701
	Daily average	852,903	453 196	369,484	74,720	100,419	67,032	134,861	112,043	2,164,658
	Twelve months	224,179,838	165,890,451	108,597 864	31,853,923	26,842,038	26,803,366	39,503,006	39,629,582	663,300,068
	Total daily average	611,452	454,494	297,528	87,271	73,539	73,434	108,227	108,547	1,817,274

Preventable Losses in Oil Refining

Oxidation:

Oxidation causes most of the tube failures in cracking stills because steel starts to oxidize at 900° F., while tube temperatures in modern cracking processes run as high as 1400° F. or more. No wonder steel tubes fail! Such failures are materially reduced by the use of

Calorized Tubes

Calorizing helps prevent failures from oxidation by driving into the steel surfaces a protective coating that withstands heat action up to 2000° F. or more in the surrounding gases—hundreds of degrees higher than the requirements of cracking.

A prominent engineer writes regarding an examination for one of his clients, a refiner: "At times reached a temperature of 1300° F. This temperature had no apparent effect on Calorized pipe, neither on the inside nor on the outside. On the outside the furnace temperature ran over 2000° F."

Don't oxidize—Calorize!

Coke Deposits:

Every refiner is sadly familiar with coke-choked pressure-still tubes, with the losses due to shutdowns for cleaning, with failures due to hot spots. Coke kills many and many a steel tube that should still be in its prime, but

Calorized Tubes

resist the ravages of coking evils. The surface of Calorized tube is aluminum oxide. Carbon has no affinity for it. It's hard for carbon to stick to it—still harder because the inside of a Calorized tube is smooth—almost glossy.

A Texas refinery had in its plain tubes, ¼" coke deposit per run, but only one-eighth as much (1/32") in its Calorized tubes, and this was soft and easily removable. Think what this means in longer runs, longer tube life, increased production and decreased fuel.

Don't theorize—Calorize!

Corrosion:

You know what still vapors do to steel. Sulphur and salt, sulphuretted hydrogen, sulphur dioxide, carbon monoxide, furnace gases—any and all of them eat the life out of steel, while

Calorized Tubes

withstand corrosion. Calorizing thus adds materially to tube-life in pressure-stills and vapor-lines, to staybolts, header bolts, nuts and threaded parts where galled or frozen threads would be troublesome. The loss due to corrosion with Calorized steel is less than one-fourth the loss of the next best material.

A test made by suspending various metals side by side in a pressure still drum for over four months where Mid-Continent crude was being cracked showed that a specimen of tank steel lost by corroision .502 pounds per square foot of exposed surface, while a Calorized steel specimen lost .013 pounds per square foot. That's the difference.

To realize it — Calorize it!

Carburization:

Ever tap a tube with a hammer between runs of your pressure stills and have a chunk of the tube fall out? Every refiner knows that this happens. What's the cause? Carburization. What's the cure?

Calorized Tubes

The protecting armor built up on the tube by Calorizing will not soak up carbon as does untreated steel under heat action. Because the carbon cannot soak into the steel, the tubes do not become embrittled. How well the Calorized steel resists carburization was shown by a test.

A 4-inch calorized steel tube was filled with draw-off residues and plugged. A smaller plain steel tube was placed inside the Calorized tube. The whole was heated for 100 hours at 1470° F. After this treatment the plain tube was badly carburized; the Calorized tube, not a bit. There was no carbon penetration into the Calorized tube and consequently no weakening.

Don't Carburize — Calorize!

Economize! Modernize! Calorize!

The Calorizing Company

Oliver Bldg., Pittsburgh

Eastern Office: 50 Church St., New York **District Offices: Chicago, Detroit, Houston, Kansas City**

"And they asked me how I did it, and I gave 'em the Scripture text,
'You keep your light so shining a little in front of the next!'
They copied all they could follow, but they couldn't copy my mind,
And I left 'em sweating and stealing, a year and a half behind."

RUDYARD KIPLING, in *"The Mary Gloster"*

THE BESSEMER GAS ENGINE COMPANY

THE spirit of the Pathfinder in the days when our continent was still largely a trackless domain, uncharted, unmeasured, unknown, is today duplicated in two forms of activity—in the drive and daring which leads men to drill for oil in previously untapped territory—and in the ceaseless study of the engineer for new methods, new mechanisms, new inventions.

Both are pioneers pushing on into the unknown for the public good.

Here at Bessemer we take an honest and permissible pride in our engineering path-finding which has meant so much to the development of the oil industry, such, for example, as our pioneering in the gasoline-from-gas process, a typical Bessemer achievement.

And the spirit of the pathfinder, whom Kipling quotes in the verse reprinted above—the spirit of leading rather than following and of refusing to be satisfied with past accomplishments—persists in the spirit of Bessemer today.

THE BESSEMER GAS ENGINE CO.
52 York Street Grove City, Pa.

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BESSEMER OIL FIELD ENGINES – COMPRESSORS VACUUM PUMPS – ROLLER PUMPING POWERS

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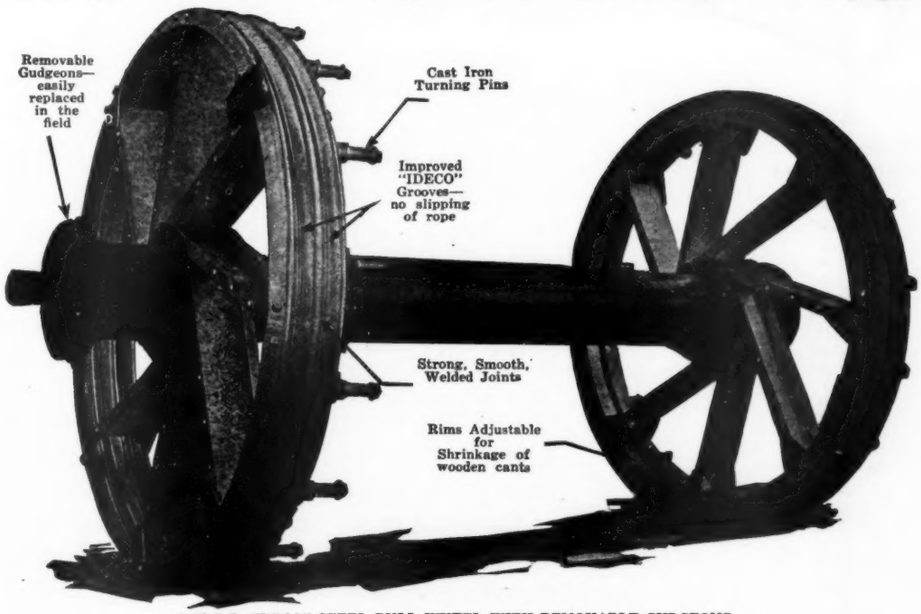
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If there is an International catalogue on your desk, don't overlook the fact that our old name—Oklahoma Tool & Supply Co.—is on the cover.

If you don't have this big, profusely illustrated and complete listing of standard oil equipment we will be pleased to forward one on your request.

While describing and illustrating equipment necessary to the oil industry, unfortunately, this book cannot picture the kind of service that is back of the equipment listed—a service that in every way measures up to the very highest for quality of merchandise, speed of delivery and courtesy of store managers and employees, all a very important part of what we deliver with your order.

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Ordinary valves must be estimated on a "cost-plus" basis. The original outlay **plus** the service charges for maintenance.

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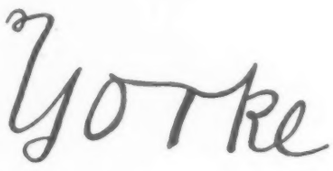
GATE VALVES

Patent Structural Steel Derricks and Drilling Rigs

Hello, Central give us Number 5000000. We are going to talk to all the Producers of Oil and Gas in the world. "There they are, go ahead." This is



of Washington, Pa. Are you all there? "Yes." Well, what we wish to tell you is that our Derricks are made of Structural Steel —just the same as Eiffel Tower, in Paris, a thousand feet high, and can entertain 10,000 people in its restaurants and theaters, and 3,000 people per hour can be handled by its elevators. We don't bother with "Duplicates, Triplicates or Falsicates;" but if you need a Derrick that will sustain 1,000,000 pounds, just say the word and it is yours. Yes, we make our derricks out of the same material that the shipbuilder uses, the railroad builder uses, what whole cities are built from, what is used in transmission towers, what is used in cranes that hoist a locomotive the same as a block of wood. In a word, we use what all the rest of the constructors in the world are using. And when everything is said and done, there are just two classes of material from which derricks can be made—namely, wood and steel. All the rest have to be patched up.

Just here we are going to stake our whole reputation on two cards—we will depend on "drawing to our hand." There are two large gas companies who have 1,000 of our derricks between them. On request, we will furnish their names and you can write them, and if they do not state that they have been using our derricks for 14 years, and that some of the derricks have drilled close to a hundred wells and are still good, and if they do not state further, that these derricks can be erected and dismantled in one-half the time required for any other derrick in the world, we will quit right here; we will never write another ad in The Oil and Gas Journal." In a word, we will submerge into the dark waters of oblivion.

ASK

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FRICK & LINDSAY, Pittsburgh, Pa.

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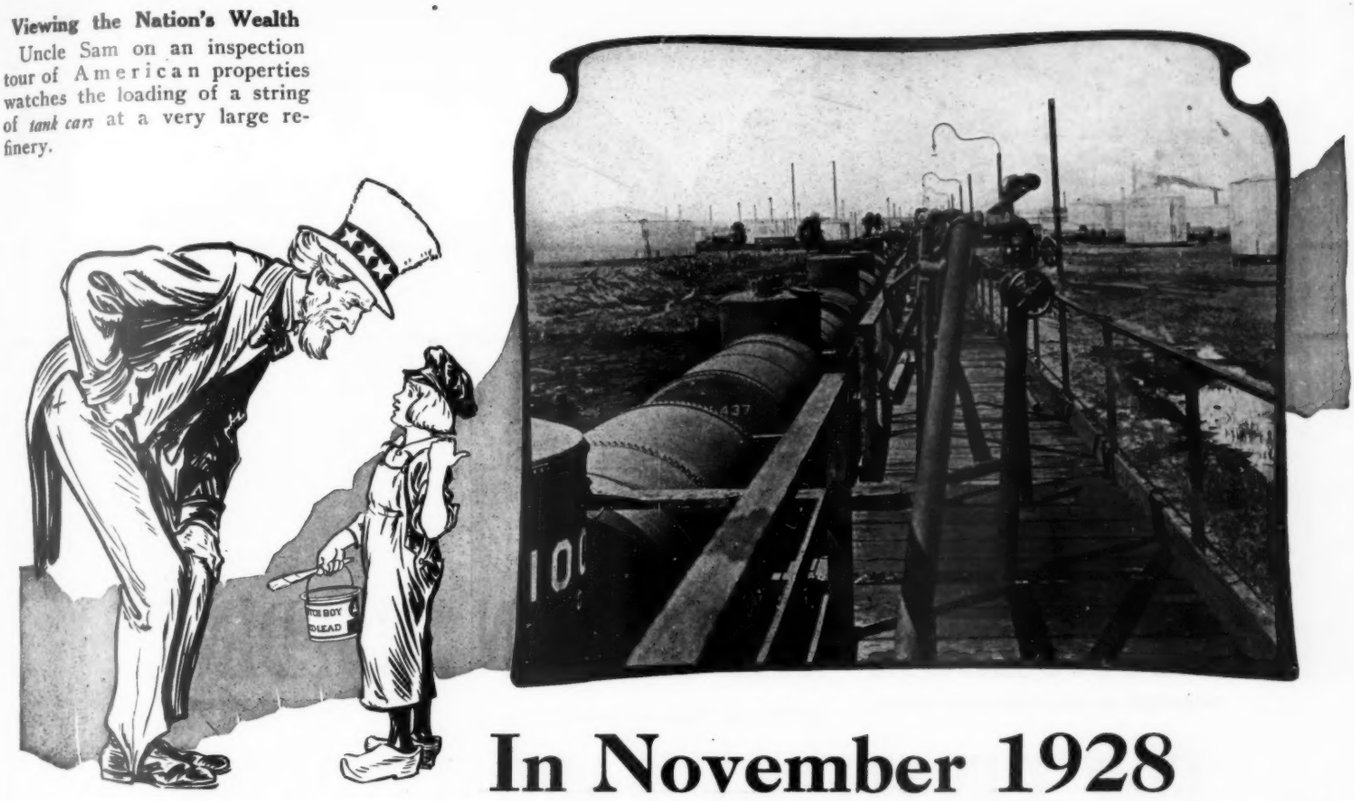
Viewing the Nation's Wealth

Uncle Sam on an inspection tour of American properties watches the loading of a string of *tank cars* at a very large refinery.



In November 1928
—where will these tank cars be?

THE DUTCH BOY PAINTER:

"These tank cars receive rough treatment sometimes, in the course of the thousands of miles they travel. But such wear and tear is not half so destructive as that inflicted by rust—if every square inch of their metal surfaces is not protected with red-lead paint. 'Keep them red-leaded' is a money-saving motto here."

GEOGRAPHICALLY, they may be separated by hundreds of miles. They may be scattered over the country from Maine to California.

Physically, they will all be in the same state of well preserved sturdiness if their metal surfaces are given equally good protection against rust.

Red-lead offers the surest means for safeguarding the millions of dollars invested in tanks, tank cars, and other metal equipment in the oil industry. Experience has established red-lead protection as *standard* protection for two reasons—(1) it forms a coating that is impenetrable to moisture, the rust-forming element, and (2) it lasts long, thus cutting down the cost of frequent repainting.

Because it is *pure* red-lead, Dutch Boy red-lead supplies to all metal surfaces complete protection against rust. It sticks tight to clean metal, forming a tough, elastic coating that expands and contracts without cracking. Months of exposure to sun, wind, rain, and snow do not cause it to scale off. Its durable film becomes almost a part of the metal surface it covers.

You can get Dutch Boy red-lead both in the form of paste and as a liquid mixed ready for application. The *liquid* comes as straight, untinted red-lead for first coats and tinted to greens, browns, and black for finising coats. The untinted *paste* can be tinted to any dark color desired.

White Lead for Light Finishing Coats

Dutch Boy white-lead, mixed with pure linseed oil, is the paint to use over red-lead if light finishing coats are desired. Light finishing coats keep tanks many degrees cooler under summer heat, thus reducing evaporation losses.

Write for Painting Helps No. 9.

"Save the surface and you save all"—Paint & Varnish

NATIONAL LEAD COMPANY

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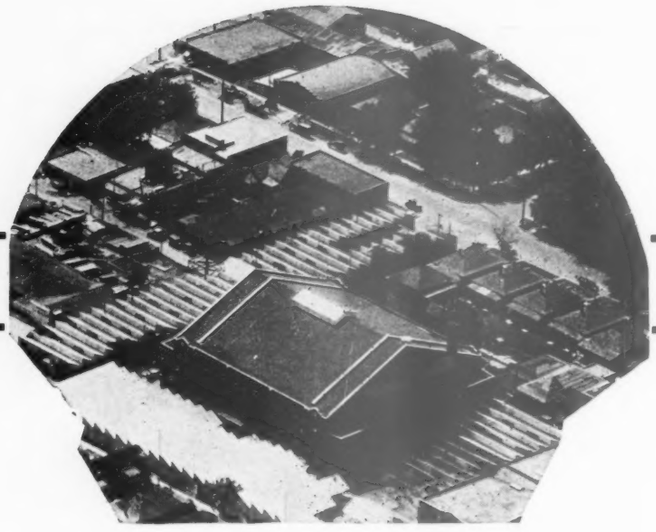
Dutch Boy Red-Lead



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FOR RESALE AT BARGAIN PRICES

The E-Z BILT Buildings that served the first International Petroleum Congress have been dismantled, and the fabricated units aggregating 300 tons are now available for resale at an attractive price.

These units are all standard and can be utilized in an infinite variety of combinations such as single and multiple garages, warehouses, engine houses, power houses, gasoline plants—also sheds and barns for farm purposes.

Probably never again will such a large quantity of fabricated material be available at a resale price. We solicit your inquiries.

THE BRADEN COMPANY

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The Cost of a Kink

Don't let your Sucker Rods get kinks or sharp bends—for if you do it is going to mean breakage, delays and expense.

We have spent many thousands of dollars in making an exhaustive study of just how Sucker Rods are used by men in the various fields—the results of this investigation are compiled in a book "CONCERNING SUCKER RODS" which we now offer for distribution, FREE. Read and properly digested, this little book will save thousands of dollars for many companies.

THE S. M. JONES COMPANY
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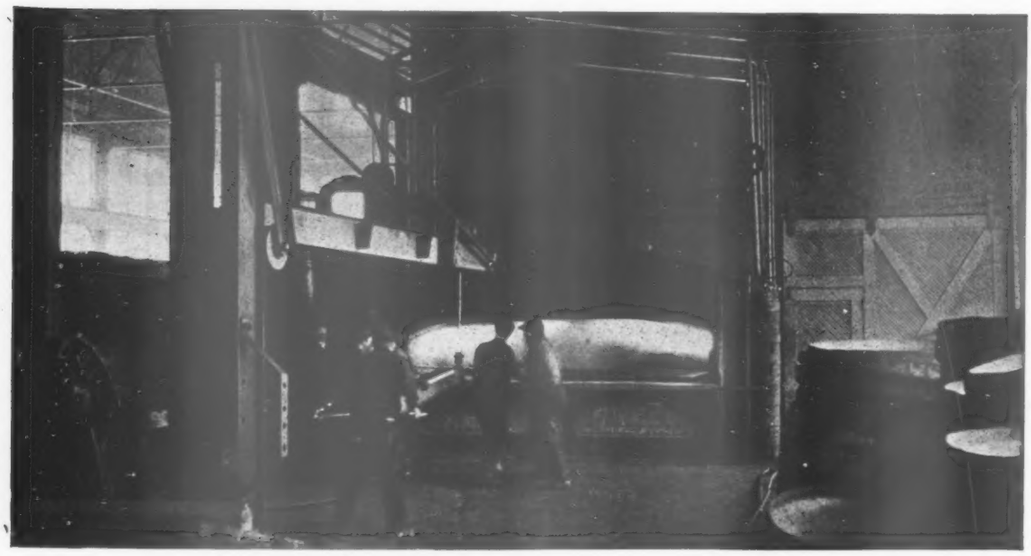

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and special steel plate construction of any description.

Particulars and estimates will be furnished upon receipt of detailed inquiry from you.

The heads on Biggs Storage Tanks are formed, complete with the flange, in one solid piece. A 300-ton hydraulic forming press takes the red hot sheet of steel plate after it comes from the oil-heated furnace, pictured above, and with one mighty impact of the ram makes a complete tank head.

In the most important operation of all, riveting: heat and hydraulic pressure again contribute very largely to the fineness of Biggs Tank construction.

Hot rivets, up to 1½" in diameter, are driven by hydraulic riveters whose pressures range up to 150 tons. A rivet so driven is as near being perfectly united with the plates it holds together as any rivet could ever be. In fact, a cross section of rivet and plate is hard to dissect for the rivet literally becomes a part of the piece itself.

These two operations are typical of the up-to-date methods followed by Biggs in the construction of steel plate of all kinds. Every operation is made by modern equipment in the most approved manner by highly skilled workmen.

For these reasons Biggs has attained a reputation in the field of steel plate fabrication that is very carefully guarded in every finished piece that leaves the factory.

We are equipped to build tanks of all kinds, oil stills, etc. We solicit your inquiries on any needs you may have in this line. Your detailed drawings and specifications, if sent to us, will assure your getting an immediate estimate.

THE BIGGS BOILER WORKS COMPANY
AKRON 35, OHIO
Established in 1887

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Made Right—Always Right

Speedy Construction of Large Structures

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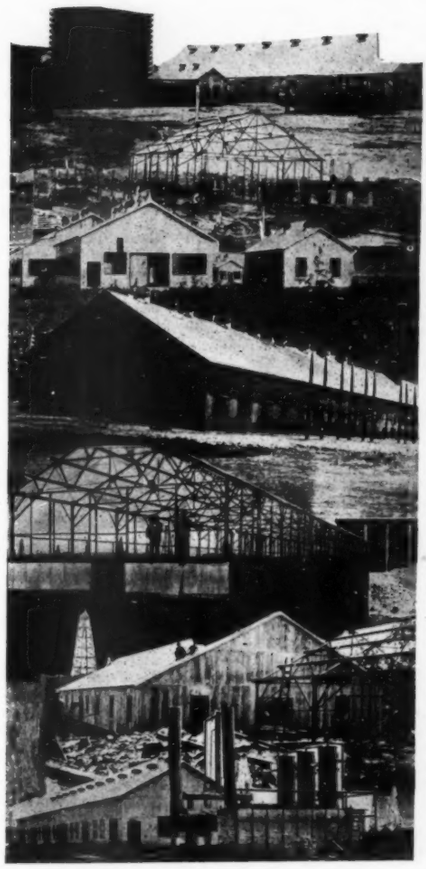
Our record for the quick erection of Indco buildings in the oil and gas fields is a guarantee to you of promptness on your order.

Many of these records are almost unbelievable—in practically a week a large substantial steel structure will appear where bare ground had been.



Let our engineers work out your problems of erection and give you estimates.

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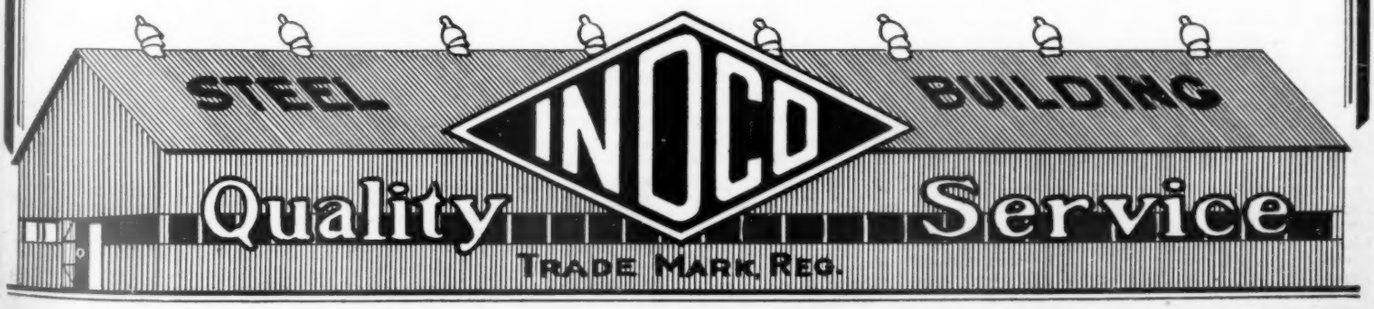

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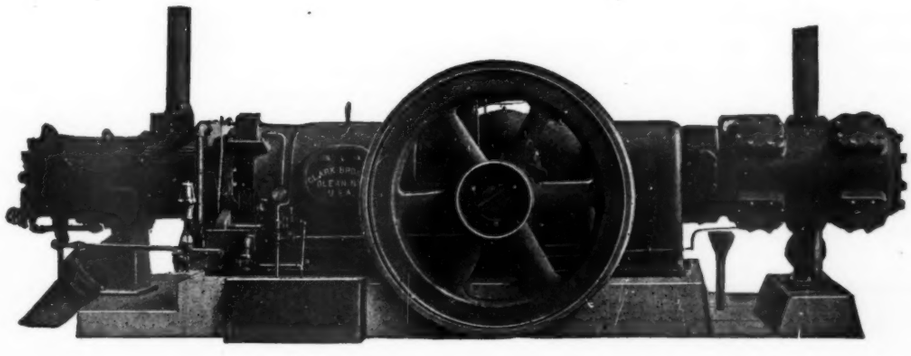
But they couldn't copy my mind,
And I left 'em sweating and stealing
A year and a half behind.

—*Kipling*



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